Over half the global population now lives in cities, and urban land use is expected to triple in area by 2030. As a result of the increasing dominance of cities, ecologists have increasingly focused their attention on urban environments in order to understand the important processes affecting urban ecosystems. Perhaps more than any other ecosystem, however, an understanding of urban habitats requires an analysis of the social as well as ecological factors affecting ecosystems. In this course, we will examine the new urban ecology, and combine ecological analyses with historical, anthropological, and sociological studies of urban nature. How are urban ecosystems similar to or different from other habitats? What are the characteristic features of urban ecosystems? How are cities connected to the ecology of distant ecosystems? What distinctive ecosystems are created in urban areas? How do we construct nature in urban ecosystems? As a human-dominated ecosystem, cities require both scientific and social-scientific analysis in order to evaluate the ecological footprint of cities, assess their ecological sustainability, examine growth management, unravel the connections between ecology and public health, or work to protect plants and animals from encroaching urbanization.

**Objectives**

I. Expose students to recent research on the ecology of urban ecosystems

II. Understand the interdisciplinary nature of urban ecosystems

III. Familiarize students with recently developed tools for analyzing urban ecosystems

**Course Structure:**

The course will be a mixture of lecture and discussion. Lectures will cover concepts and new research on the scientific aspects of urban ecology. For each lecture I have assigned a review article or article from the primary literature that introduces the lecture topic. I will also provide bibliographies for further reading. After every 3 lectures or so, we will read and discuss a paper from the humanities or social sciences that addresses topics, questions and concepts raised in the preceding lectures. In this way we will be able to appreciate how understanding urban ecology requires an interdisciplinary approach. There will be two lab sessions where I will introduce analytical tools for investigating urban ecology. You will need to bring your laptop to class for these sessions.

All readings will be posted on the course Compass site. These readings are required, but there is no additional textbook or course packet to purchase. I will also post the slides from the lectures (but not the notes) on the Compass site.
Course Requirements:

1) Students will arrive in class having read the material, and will take an active part in discussion. Write down notes and questions on the readings. Bring them up in class discussion. Participation in discussion will account for 10% of the grade. (no need to hand anything in, however).

2) Students will write one 5-page paper on a particular species of urban plant, animal or other organism. I will provide a list of species from which to select. The paper will account for 15% of the grade. Papers must be typed, double spaced, single sided, and handed in on paper. I will not accept electronic submissions. Paper is due March 2nd.

3) Students will write a paper of about 15 pages on a topic of their choice. The paper must integrate scientific and humanities/social scientific approaches to urban nature. The paper will be due at 5pm, May 8th in my box in Room 111 Buell Hall. Late papers will not be accepted. The paper will account for 35% of the grade. Papers must be typed, double spaced, single sided, and handed in on paper. I will not accept electronic submissions.

4) Two exams, March 16 and May 2. The second exam, on the last day of class, will not be cumulative. Each exam accounts for 20% of the grade. There is no final exam scheduled during finals week.

Academic Honesty--You are strongly encouraged to discuss class assignments with others, but your work in papers and exams must be your own. Do not quote directly (and direct quotations must be indicated with quote marks “ ”) or paraphrase from published works (including the web, and including Wikipedia) without a proper citation. Footnote ideas and information that are not common knowledge. When in doubt about what academic integrity requires, ASK! Failure to abide by the principles of academic honesty will result in a failing grade for the course. University of Illinois guidelines can be found at http://studentcode.illinois.edu/article1_part4_1-401.html. You are expected to be familiar with this section of the student handbook.
Course Schedule

January 17  **Urban Ecology—Introduction**

January 19.  **Ecological Niche**

January 24.  **Discussion.**

January 26.  **Island Biogeography** —

January 31.  **Habitat and Fragmentation** —

February 2.  **Metapopulations and corridors** —

February 7.  **Discussion**

February 9.  **Bedbugs**

February 14.  **Urban Ecology and Disease** —

February 16.  **Discussion.**

February 21.  **Disturbance and Succession,**
February 23. **Restoration**

February 28. **Discussion.**

March 2. **Species Paper due.**

March 2. **Ecosystem Services**—

March 7. **Urban Forests**

March 9. **i-tree lab**

March 14. **Discussion**

March 16. **1st Exam.**

March 28. **Measuring Urban Sustainability and Ecological Footprint Analyses**

March 30. **Urban Metabolism,**

April 4. **Urban Metabolism Analysis lab.**
[http://www.stan2web.net/](http://www.stan2web.net/)

April 6. **Sewage Sludge,**

April 11. **Discussion.**

April 13. **Urban bacterial habitats**: sewage treatment plants, landfills, industrial ecosystems

April 18. **Urban wildlife.**

April 20. **Urban Rivers.**

April 25. **Domestic spaces**

April 27. **Discussion**

May 2. **2nd Exam**

May 8. **Final Paper due**