

Fall 2024

GEOG/ENVI 203-01
Introduction to Urban Ecology

Class meeting time: Tuesdays and Thursdays, 1:20-2:50 pm
Class Meeting Location: Carnegie 107

Instructor: I-Chun Catherine Chang
Office Hours: Tuesdays and Thursdays 3-4 pm, or by appointment
Office Location: Carnegie 106
Email: ichang@macalester.edu

Course Introduction

Urban ecology is both a concept and a field of study. It focuses on interactions between humans, urban ecosystems, and the built environment. With over half of the world's population now living in cities, cities have assumed a critical role in shaping local, regional, and global ecologies. In this course, we will examine the distinctiveness of the interconnected urban biophysical, socio-economic, and political processes. In order to disentangle the complexity of human-environment relations in cities, we will take an interdisciplinary approach and learn theories and concepts in natural science ecology, environmental studies, geography, urban planning, sociology, and public policies. We will use our campus and the Twin Cities as a "living laboratory" and apply these theories and concepts to laboratory exercises, field observation, case studies, and research on contemporary urban sustainability initiatives.

Learning Objectives

Upon the successful completion of this course, you should be able to:

- Comprehend basic ecological and environmental concepts and principles related to urban ecosystems;
- Understand major arguments in and the critical concerns of urban political ecology;
- Describe and appreciate the complex and diverse relationships between cities and ecology, and between humans and the built environment;
- Apply principles and concepts of urban ecosystems to analyze our surrounding urban habitats;
- Compare and contrast different visions and perspectives of urban ecological sustainability initiatives across world regions;
- Critically discuss contemporary socio-economic issues of urban ecology in different urban contexts;
- Make policy recommendations for a more sustainable urban future.

Attendance

Attendance is required. This course focuses on student-oriented learning. You will learn through lectures, in-class discussions, and various activities designed to help you understand major concepts of urban ecology and acquire basic research skills for studying urban eco-systems and urban political ecology. Handouts and supplement materials will be distributed from time to time in class.

I recognize that there are unavoidable circumstances that sometimes make it impossible for you to attend class. If you will not be in class for any reason, it is your responsibility to inform me in advance via email. It is also your responsibility to catch up with the course materials and make up the work you missed in your absence. The instructor is not responsible for providing handouts for students who have been absent from class. Students with special needs should discuss their accommodations with me early in the course to work out a plan that aligns with maintaining course expectations and learning goals.

Participation

Participation is distinct from attendance and is also an essential part of this course. In-class discussions and activities, responses to brief ungraded writing assignments, etc. will be factored into your participation grade. Engaging with various forms of classroom space and helping to create an environment where all of us can learn and think well about one another will also be factored into participation. Students with any concerns, questions, or need for consideration for flexibility should connect with me as soon as possible to determine an appropriate plan.

Producing a Positive Learning Environment

To give students the opportunity to think about urban ecology from new perspectives, we need to work together to create a positive learning environment. For this to happen, I expect your cooperation in at least three ways:

- Respect the rights of other students to learn.
- Acknowledge and respect the diversity of participants in this class. Discussion of controversial issues is encouraged. Even if you don't agree with the points of view of others, as citizens of this class we all share a responsibility for respecting all individuals as fair-minded persons. Diversity is a strength in our society at large and here at Macalester College. In this class you will be asked to maintain an open mind to the differences around you, and place positive value on that diversity.
- Your regular attendance and participation.

In return, I promise to be on time, to address your questions and concerns, to give you feedback on your performance, and to return graded materials in a timely manner. You can expect me to reply to your emails within 48 hours. You are encouraged to meet with me to discuss your questions and concerns during office hours.

Students with special needs: All of us learn in different ways and with varying degrees of success. If you know of any factors in your life that may hinder your abilities to learn up to your

potential in this course, please notify me as soon as possible. You should also contact Disability Services (phone: 651-696-6874; email: disabilityservices@macalester.edu) or the MAX Center's Disability Accommodations (phone: 651-696-6121, coordinator's email: lucking@macalester.edu), who have more expertise than I do in determining what special steps need to be taken to enable you to participate fully.

Mental health and wellbeing: All of us may feel anxious and stressed from time to time during the semester. If you need support for mental health and wellbeing, visit the Laurie Hamre Center for Health and Wellness in the Leonard Center, or call 651-696-6275 to reach them by phone.

Required Readings

The lectures and activities will make the most sense if each week's readings are completed *before* the relevant lectures and activities.

There is one required text for this course:

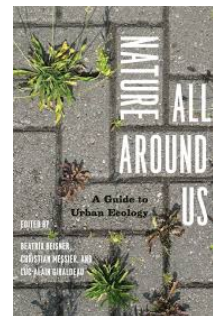
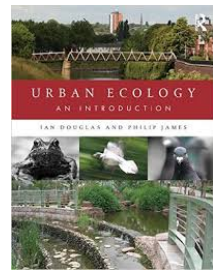
Douglas, I. and James, P. 2015. *Urban Ecology: An Introduction*, Routledge.

This book has a newer 2nd edition that also works for this course.

And one supplement book:

Beisner, B., Messier, C. and Giraldeau, L. 2013. *Nature All Around Us*, University of Chicago Press.

Other required readings and supplement materials will be posted on the course Moodle site. You should print out and read each week's readings in advance of their assigned date in the syllabus and bring them with you to class in order to facilitate your full class participation. Unless otherwise stated, audio or video clips used in class will also be available on the course Moodle site.



Academic Honesty

It is necessary to remind everyone that academic dishonesty in any form will not be tolerated. Honesty and integrity is expected at all times. The use of AI or AI assisted writing tools is not allowed in this course. Cases of academic dishonesty will be handled according to the College's guidelines. You are responsible for learning about these policies (<http://www.macalester.edu/academicprograms/academicpolicies/academicintegrity/>) so that you can meet this responsibility. By participating in this course, *you agree to submit your assignments in digital form if requested*, enabling the instructor to ensure they are not plagiarized from other materials available on the Internet and elsewhere.

Grading

Students taking the course on an A-F basis will be graded as follows:

- A – achievement that is outstanding relative to the level necessary to meet course requirements.
- B – achievement that is significantly above the level necessary to meet course requirements.
- C – achievement that meets the course requirements in every respect.
- D – achievement that is worthy of credit even though it fails to meet fully the course requirements.
- S – achievement that is satisfactory (equivalent to a letter grade of at least C-).
- F – NC, signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit, or (2) is incomplete, with no agreement between the instructor and the student that the student would be awarded an “I”.
- I – Incomplete. A grade of incomplete may be awarded at the discretion of the instructor, if requested by the student, under the following conditions: (1) at least three-quarters of the required work for the course has been completed, (2) unforeseen circumstances beyond the student's control (usually restricted to illness or family emergency) preclude completion of the remaining work for the course by the semester deadline, (3) the student is not on strict academic probation. *In fairness to other students, please note that poor planning or having a lot of work to complete at the end of the term are not considered circumstances beyond a student's control.*

Grades for the course will be assigned based on the following scale:

A 93-100%	B+ 87-89.9%	C+ 77-79.9%	D+ 67-69.9%	F 0-59%
A- 90-92.9%	B 83-86.9%	C 73-76.9%	D 60-66.9%	
	B- 80-82.9%	C- 70-72.9%		

Assignments

In this course, you will be expected to submit four written assignments and complete one exam. Detailed instructions for the assignments will be handed out and discussed in class. All written assignments must be printed out and turned in during class or a meeting. It is your responsibility to ensure that all of the assignments are submitted on time.

Grade Allocation and Deadlines

Participation and attendance	15%	
Soil lab report	10%	10/01
Mid-term exam	15%	10/24
Field trip report	15%	11/21
Urban habitat observation project		
Presentation	5%	11/26
Description and analysis	10%	11/26
Sustainability policy research		
Outline	5%	11/14, 19, 21
Presentation	5%	12/03, 05
Paper	20%	12/10

These dates and deadlines are non-negotiable with the exception of extraordinary circumstances such as a personal or family medical emergency (in which case official documentation to the effect must be provided). Should you have any concerns regarding academic disputes, scholastic misconduct, or sexual harassment, you may contact the Office of Student Affairs located at 119 Weyerhaeuser Hall (phone: 651-696-6220; email: studentaffairs@macalester.edu), and the Academic Programs Office at 215 Weyerhaeuser Hall (phone: 651-696-6036). The Office of Student Affairs and the Academic Programs Office websites, with the College's policies on these issues, are at

<https://www.macalester.edu/studentaffairs/>

<http://www.macalester.edu/academicprograms/academicpolicies/>.

See next page for course schedule.

Course Outline and Readings

Any suggestions that will enhance learning are welcome. Please note that the class schedule and readings may be subject to change. It is your responsibility to keep up with any changes.

09/03: Course overview

No assigned reading. Read the syllabus carefully.

Topic 1: The Basics of Urban Ecosystems

09/05, 09/10: Relationship between cities and ecology

Douglas, I. and James, P. 2015. "Cities and ecology", "Cityscapes", and "Cities as systems", in *Urban Ecology*, Routledge, 9-72. (chapter 1, 2, 3)

[Supplement] Young, R. F. 2009. Interdisciplinary foundations of urban ecology. *Urban Ecosystems*. 12(3): 311-331.

Cityscape observation

09/12, 09/17, 09/19, 09/24: The physical environment

Douglas, I. and James, P. 2015. "The urban atmosphere", "Urban geomorphology and soil", "Urban hydrology", and "Urban biogeochemistry" in *Urban Ecology*, Routledge, 75-182 (chapter 4, 5, 6, 7)

[Supplement] Beisner, B., Messier, C. and Giraldeau, L. 2013. *Nature All Around Us*, University of Chicago Press. (chapter 1, 22)

Soil lab

09/26, 10/01, 10/03: Urban habitats

Douglas, I. and James, P. 2015. "Urban habitates", "Urban floras", and "Urban fauna" in *Urban Ecology*, Routledge, 187-214. (chapter 8, 9, 10)

[Supplement] Beisner, B., Messier, C. and Giraldeau, L. 2013. *Nature All Around Us*, University of Chicago Press. (chapter 10, 18, 21 with textbook chapter 8; chapter 2, 3, 5, 4, 17, 25 with textbook chapter 9; chapter 6, 7, 8, 9, 11, 12, 13, 14, 15, 19, 20, 23, 24 with textbook chapter 10)

Introducing urban habitat observation project

Campus urban sustainability trip

10/01: Soil lab due

10/03: online learning, Catherine is away.

10/08, 10/10, 10/15: Planning for urban sustainability

Douglas, I. and James, P. 2015. "Urban ecology stewardship", "Adapting to change", and "The role of urban ecology in future cities" in *Urban Ecology*, Routledge, 341-420. (chapter 14, 15, 16)

10/10 International Roundtable, no class

10/17: Fall break, no class

10/22: Guest lecture, TBD

10/24: Midterm exam

Topic 2: Urban political ecology

10/29: What is urban political ecology?

- Heynen, N., Kaika, M. and Swyngedouw, E. 2006. Urban political ecology: politicizing the production of urban natures, in *In the Nature of Cities*, Routledge, 1-20.
- Braun, B. 2005. Environmental issues: writing a more-than-human urban geography, *Progress in Human Geography*, 29(5): 635-650.
- Introducing sustainability policy research project*

10/31: Rethink urban metabolism

- Swyngedouw, E. 2006. Metabolic urbanization: the making of cyborg cities, in *In the Nature of Cities*, Routledge, 21-40.
- Wachsmuth, D. 2012. Three ecologies: urban metabolism and the society-nature opposition, *The Sociological Quarterly*, 53(4): 506-523.
- Fernández, F. E. 2014. Urban metabolism of the global south, in *The Routledge Handbook on Cities of the Global South*, Routledge, 597-612.

11/05: Ecology and social inequality

- Heynen, N., Perkins, H. A., and Roy, P. 2006. The political ecology of uneven urban green space the impact of political economy on race and ethnicity in producing environmental inequality in Milwaukee. *Urban Affairs Review*, 42(1), 3-25.
- Dooling, S. 2009. Ecological gentrification: A research agenda exploring justice in the city, *International Journal of Urban and Regional Research*, 33(3), 621-639.
- Introducing field trip options 1 & 2: St. Paul Eco-District & Mill City Museum and Minneapolis downtown riverfront development*

11/07: Eco-cities

- Joss, J. and Molella, A. 2013. The Eco-City as Urban Technology: Perspectives on Caofeidian International Eco-City (China), *Journal of Urban Technology*, 20(1), 57-75.
- Chang, I. C. and Sheppard, E. 2013. China's eco-cities as variegated urban sustainability: Dongtan eco-city and Chongming eco-island, *Journal of Urban Technology*, 20(1), 57-75.
- Low, M. 2013. Eco-cities in Japan: past and future, *Journal of Urban Technology*, 20(1), 7-22
- Shwayri, S. 2013. A Model Korean Ubiquitous Eco-City? The Politics of Making Songdo, *Journal of Urban Technology*, 20(1), 39-55.

11/12: Consumption and ecology

- Robbins, P. and Sharp, J. T. 2003. Producing and consuming chemicals: the moral economy of the American lawn, *Economic Geography*, 79(4), 425-451.
- McAlpine, C. A., Etter, A., Fearnside, P. M., Seabrook, L., and Laurance, W. F. 2009. Increasing world consumption of beef as a driver of regional and global change: A

call for policy action based on evidence from Queensland (Australia), Colombia and Brazil. *Global Environmental Change*, 19(1), 21-33.

11/14, 11/19, 11/21: Fieldtrip and research week, not meeting in class

Group meetings with Catherine for policy research project with paper outline due at the time of meeting.

Field trip report due in Catherine's mailbox on 11/21

11/26: Urban habitat observation report: presentations and peer feedback

Urban habitat observation report due in class

12/03, 12/05: Sustainability policy research: presentations and peer feedback

12/10: Concluding the course: putting knowledge into practice

Sustainability research paper due in class