

Spring 2017

GEOG 294-01/ENVI 294-04
Introduction to Urban Ecology

Class meeting time: Tuesdays and Thursdays, 3-4:30pm
Class meeting location: Carnegie 005

Instructor: I-Chun Catherine Chang
Office hours: Monday & Wednesdays, 6-7 pm, or by appointment
Office location: Carnegie 104F
Email: ichang@macalester.edu

Teaching Assistants: Maggie Lobbig & Mackenzie O'Brien
Office hours & location: Wednesdays 7-9pm (Campus Center) & 9:30-10:30pm (Carnegie 104),
Thursdays 1:30-2:30pm (Carnegie 104), or by appointment
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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

By the end of the course, you should be able to:

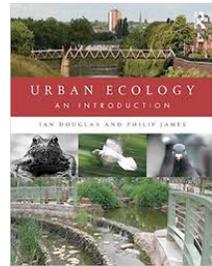
- Comprehend basic ecological and environmental concepts and principles related to urban ecosystems;
- Understand major arguments in and the critical concerns of urban political ecology;
- Describe and appreciate the complex and diverse relationships between cities and ecology, and between human and 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 recommendation for a more sustainable urban future.

Attendance

Regular attendance at lectures is required. The midterm exam, final exam, and assignments will test you not only on the assigned course readings but also on lecture materials that will often be supplementary to the readings. In-class activities are also essential to enhancing your capacity for applying what you learn in lectures and readings in real life situations. Slides used in the lectures will be posted on our Moodle site; they will not be circulated via email. *If you miss a class, it is your responsibility to catch up with the course materials.* Handouts will be distributed from time to time in class. *The instructor is not responsible for providing handouts for students who are absent from class.*

Required Readings

The lectures and activities will make most sense if each week's readings are completed *before* the relevant lectures and activities. You are responsible for everything covered in the lectures, activities, text and the readings. It will be almost impossible to cover and understand the required readings if you leave them to the last minute, right before exams. This makes it strongly advisable that you not only attend all lectures but also stay on top of each week's readings, making it easier to follow lectures and ask questions on an ongoing basis, rather than succumbing to last-minute anxiety.



There is one required text for this course:

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

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 each week's readings in advance of, and read them prior to, 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.

Producing a Positive Learning Environment

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

- The first expectation is respecting the rights of other students to learn.
- The second is to acknowledge and respect the diversity of participants in this class. Discussion of controversial issues is encouraged. Even if you do not 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.

- The third expectation is attendance and participation. You are expected to be present at the beginning of class and stay until the end, and to fully participate in class discussions and activities. You are asked to turn off your cell phone before entering the classroom and not to use electronic devices for activities not related to the course. Your course attendance and participation will affect your grade.

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, and you are encouraged to meet with me and discuss your questions and concerns during the 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 the Disability Services of Student Affairs (119 Weyerhaeuser Hall; Phone: 651-696-6220; Email: studentaffairs@macalester.edu), who have more expertise than I in determining what special steps need to be taken to enable you to participate fully.

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. 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. *Note that poor planning or having a lot of work to complete at the end of the term are not, in fairness to other students, 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. 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 meeting; no electronic submission will be accepted. It is your responsibility to ensure all the assignments are submitted on time.

Grade Allocation and Deadlines

Participation and attendance	10%	
Mid-term exam	20%	03/09
Urban habitat observation project		
Presentation	5%	04/20
Description and analysis	10%	04/20
Fieldtrip report	10%	04/18
Sustainability policy research		
Draft	5%	04/11 or 13
Presentation	5%	04/25 or 27
Paper	15%	04/25 or 27
Final exam	20%	05/04

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/>.

Course Outline and Readings

Any suggestions that will enhance the 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.

01/19: Course overview

No assigned reading.

Topic 1: The Basics of Urban Ecosystems

01/24, 1/26 & 01/31: 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)

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

Cityscape observation

Required to attend the Geography Lanegran Day keynote address by Karen Seto on 01/26, 4:45-6pm @ Weyerhaeuser Boardroom.

Optional reading: Fragkias, M. (forthcoming) "Karen C. Seto", in R. Koch and A. Latham (eds.) *Key Thinkers on Cities*, London: SAGE.

02/02, 02/07 & 02/09: 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 (if weather permitted; if not, we will move it to a later date.)

02/14, 02/16 & 02/21: Urban habitats

Douglas, I. and James, P. 2015. "Urban habitats", "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

02/23 Guest lecture

Readings TBD.

02/28 & 03/02: 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)

Campus urban sustainability trip on 03/02

03/07 Guest lecture
Readings TBD.

03/09: Midterm exam

03/14 & 03/16: Spring break
Use the break wisely for readings in the coming week!

Topic 2: Urban political ecology

03/21: 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*

03/23: 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.

03/28: 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.
- Introducing fieldtrip option 1: St. Paul Eco-District*

03/30: 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 fieldtrip option 2: Mill City Museum and Minneapolis downtown riverfront development

04/04 & 04/06: Fieldtrip and research week, not meeting in class

Catherine is away for the annual meeting of American Association of Geographers.

04/11 & 04/13: Group meetings with Catherine for policy research project with first draft

Draft due at the time of meeting.

04/18: 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.

Fieldtrip report due in class

04/20: Urban habitat observation report: presentations and peer feedback

Urban habitat observation report due in class

04/25 & 04/27: Sustainability policy research: presentations and peer feedback

Sustainability research paper due at the day of presentation

We will also conclude the course and do course evaluation on 04/27.

05/04: Final exam

10:30-12:30pm, Thursday

(<https://www.macalester.edu/registrar/schedules/2017spring/finalexams/>)