

URBS 2900 – METROPOLITAN NATURE

Thriving Cities

This is the syllabus for Fall 2024. Be aware, it will change some.

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Wednesday, 1:45-4:45

Many people would argue that designing the future is a fool's errand: an impossible task, doomed to fail. Others, however, argue that all systems that control large sectors of our lives, if not most, are designed. Our cities are as well. As David Orr tell us, the banking system, the education system, even our consumer behavior are dominated by designed systems.

Pessimism, doom, end-times, and dystopia are currently in fashion among portions of our population. A popular course at the University of Chicago entitled "Are We Doomed?" identifies nuclear weapons, climate change, artificial intelligence, and inequality as existential threats to the survival of the human race.

In this course, we flip the script. We begin by understanding that we designed our way to this point and we have no choice but to design our way out of the current situation. Let's envision, design, and implement a positive future. Let's roll up our sleeves and get to work, the clock is ticking.

Cities are our focus because they are small enough to be able to implement solutions but large enough to display the characteristics of complex systems. Building a sustainable city is NOT an act of science fiction. But it does require a leap of imagination. It also requires that we ask difficult and challenging questions to which there are no easy or immediate answers. Therefore, we must turn to other disciplines such as neurobiology, psychology, and philosophy for help. We must also answer really basic yet challenging questions such as:

- In what kind of world/city do I want to live in 25 to 50 years?
- What do I want it to look like, smell like, et al?
- What are the elements and systems of a sustainable city that must be considered?
- What challenges do I foresee in designing a sustainable city?
- What are the impediments (obstacles) to realizing/implementing a sustainable city?

TEXTS:

- Meadows, Donella, *Thinking in Systems*, Chelsea Green, 2008. (ER on Canvas)
- Lenton, Tim, *Earth Systems Science: A Very Short Introduction*, Oxford University Press (online through Penn Libraries)
- Chandler, Daniel, *Free and Equal*, (ER)
- Raworth, Kate, *Doughnut Economics* (online through Penn Libraries)
- Earth For All, New Society Publishers, (online through Penn Libraries)
- Amrith, Sunil, *The Burning Earth*, WW Norton, 2024.

VISUAL TEXTS: (asynchronous)

- Baichwal, Jennifer and Edward Butynsky, *Manufactured Landscapes*, 2009. <https://video-alexanderstreet-com.proxy.library.upenn.edu/watch/manufactured-landscapes> or (Amazon Prime)
- Baichwal, Jennifer and Edward Burtynsky, *Watermark*, 2017. (Amazon Prime)
- Baichwal, Jennifer and Edward Burtynsky, *Anthropocene*, 2019 https://franklin.library.upenn.edu/catalog/FRANKLIN_9977951452903681

SCHEDULE

Note: The readings listed for a particular date should be completed for class discussion on that day.

Premier among the consequences [of human existence] is the capacity to imagine possible futures, and to plan and choose among them. How wisely we use this uniquely human ability depends on the accuracy of our self-understanding. The question of greatest relevant interest is how and why we are the way we are, and from that, the meaning of our many competing visions of the future.

E.O. Wilson, *The Meaning of Human Existence*, p. 14

Module 1: Defining the Problem Holistically

- September 9: What is the problem we are trying to solve?
 - Readings
 - Meadows, Donella, *Envisioning a Sustainable World*
 - Collins and Porras, "Building Your Company's Vision," *Harvard Business Review*
 - Brown, H. Claire, "Attack of the Superweeds," *New York Times Magazine*, August 22, 2021, <https://www.nytimes.com/2021/08/18/magazine/superweeds-monsanto.html>
 - Class:
 - Introductions:
 - Bring six (6) Powerpoint or Keynote slides introducing:
 1. yourself,

2. the environment in which you were raised,
 3. something that moves you,
 4. your understanding of sustainability, and
 5. Something that brings awe and wonder into your life.
 6. influences on your thinking, particularly your thinking about the environment, justice, and the economy.
- Systems thinking: What is the problem we are trying to solve? Defining and diagramming the problem
 - Climate narratives: what message are they sending?
 - Planetary Boundaries
 - Values
- September 15, Sunday evening 8:00PM
Assignment 1, Introductory Statement: Envisioning a Sustainable, Resilient, and Just World.
 - Envision the sustainable city in 25-50 years. (Use the declarative as in, “the sustainable city is,” instead of using “should.” Use Donella Meadows vision for a hunger-free world as a model.)

Module 2 – The Earth as a System, Defining the “Big” Question, and Leveraging the System: From Problems to Possibilities

- September 16 and 23: The Earth as a System: the current narrative of climate change isn’t working. Change the script.
 - Readings:
 - Lenton, Tim, *Earth Systems Science: A Very Short Introduction*, Oxford University Press (Available online through Penn Libraries).
 - Ghosh, Amitav, “Terra Forming,” *Nutmeg’s Curse*, Chapter 4
 - Steffan, et al “Safe and Just Planetary Boundaries”
 - E.O Wilson, *Half Earth*, “Introduction.”
 - Wahl, Daniel Christian, *Designing Regenerative Cultures*, “Foreword, Introduction, and Chapter 1” (please pay close attention to David Orr’s foreword)
 - Korten, David, *Story Power*, <https://davidkorten.org/great-turning/story-power/> “Change the Story, Change the World,”

“If you define the goal of a society as GNP [GDP], that society will do its best to produce GNP. It will not produce welfare, equity, justice, or efficiency unless you define a goal and regularly measure and report the state of welfare, equity, justice, or efficiency.”

Donella Meadows

- September 30 and October 7 Systems Thinking: Seeing the Whole and Not Just the Parts.

- Readings
 - Meadows, Donella, *Thinking in Systems*, Chelsea Green, 2008. (ER)
 - Wahl, Daniel Christian, *Designing Regenerative Cultures*, "Chapters 2, and 3.
 - Capra, Fritijof, "Introduction," *A Systems View of Life*,
 - Berry, Wendell, "Solving for Pattern," *Nature's Operating Instructions*.
 - Kay, "What Changes in a Complex World," Chapter 5, *The Ecological Approach*
- Visual Text: (asynchronous)
 - Vandana Shiva: Earth Democracy, Mind Life Institute
<https://www.youtube.com/watch?v=KjD1NikNWF4>
 - Peter Senge, "Systems Thinking for a Better World."
<https://www.youtube.com/watch?v=0QtQgZ6Q5-o>
- Class
 - Lecture: Seeing the Whole
 - Lecture: Global Polycrisis
- October 14 Worldviews, Paradigms, and Mental Models
 - Lake, Osprey Orielle, *The Story Is in Our Bones*, pp 1-24.
 - Kimmerer, Robin Wall, "The Language of Animacy," *Braiding Sweetgrass*.
 - McGilchrist, Iain, "Introduction," *The Matter with Things*.
 - Kolbert Elizabeth, "When Facts Don't Change our Minds," *New Yorker*,
- October 13
 - **Integrated Statement for Module #2,**
 - **Due: Sunday Night, October 13 at 8:00PM**

Module 3 – Designing Regenerative Cultures

- October 21: Envisioning a Sustainable Culture on Planet Earth
 - Readings:
 - *Designing Regenerative Cultures*, "Chapter 4,"
 - *Earth For All: A Survival Guide for Humanity*, The Five Extraordinary Turnarounds
 - Ramphela, Mamphela, A living systems approach to achieving global equity for a healthy planet, *Earth For All*, 2022
- October 28: Envisioning a Just Future: Lessons from Rawls
 - Readings:
 - Chandler, Daniel, *Free and Equal: what would a fair society look like?* (selections)
 - *Designing Regenerative Cultures*, "Chapter 5,"

- Brewster, Jamie et al, “The system within: Addressing the inner dimensions of sustainability and systems transformation,” Earth for All, 2024.
- November 4 and 11 Envisioning a Just Economy
 - Readings:
 - Raworth, Kate, *Doughnut Economics*, (selections)
 - Raworth, Kate, City Portraits
 - Daly, Herman, Economics in a Full World, *Scientific American*,
 - Fullerton, John, “Regenerative Economics: How Universal Principles and Patterns Will Shape Our New Economy,” 2015.
 - Dark Materials Laboratory, “Life Ennobling Economics.”
 - Beinhooker , Eric D. “Toward a New Ontological Framework for the Economic Good,” 2020, *Global Perspectives* 1 (1).
<https://doi.org/10.1525/gp.2020.17578>.
 - Trebeck, Katherine, “Getting wellbeing economy ideas on the policy table: theory, reality, pushback and next steps,” Earth For All, 2022.
 - Scharmer, Otto, “Transforming our economies from ego to eco,” Earth For All, 2022.
 - Susskind Daniel, “We Must Change the Nature of Growth,” International Monetary Fund, Sept 2024.
<https://www.imf.org/en/Publications/fandd/issues/2024/09/we-must-change-the-nature-of-growth-daniel-susskind>
 - Visual Text: (asynchronous)
 - The Institute for Ecological Civilization, The Next Economy: Transforming Economic Systems After COVID-19
 - <https://ecociv.org/ecociv-dialogues-on-global-systems-change/>
- **Integrated Statement for Module #3,**
- **Due: Sunday Night, November 10 at 8:00PM Envisioning a Sustainable World with Justice and a Just Economy**

“We take it for granted, the world that we love—and we’re destroying it so quickly. The light of dawn on the prairie. The silvery flash of fish in a stream. The cry of a hawk over a forest. Everybody has their own idea of the beautiful, and we’ll surely miss it when it’s gone.”

Johan Rockström

“We have been seriously misled, I believe, because we have depended on that aspect of our brains that is most adept at manipulating the world in order to bend it to our purposes. The brain is, importantly, divided into two hemispheres: you could say, to sum up a vastly

complex matter in a phrase, that the brain's left hemisphere is designed to help us ap-prehend – and thus manipulate – the world; the right hemisphere to com-prehend it – see it all for what it is. The problem is that the very brain mechanisms which succeed in simplifying the world so as to subject it to our control militate against a true understanding of it. Meanwhile, compounding the problem, we take the success we have in manipulating it as proof that we understand it. But that is a logical error: to exert power over something requires us only to know what happens when we pull the levers, press the button, or utter the spell. The fallacy is memorialised in the myth of the sorcerer's apprentice.² It is hardly surprising, therefore, that while we have succeeded in coercing the world to our will to an extent unimaginable even a few years ago, we have at the same time wrought havoc on that world precisely because we have not understood it”

Iain McGilchrist p. 18 (iBooks)

Module 4 – Stepping into the Future: Designing Thriving Cities

- November 18, November 25, December 2, and December 9

The Final Project

Designing the Sustainable and Thriving City: Supporting People While Respecting Planetary Boundaries. What Needs to Change and What Will It Look Like?

The final four weeks are devoted to envisioning/designing the thriving city. We will work collaboratively on its vision/design for the first two weeks researching urban systems identified in the five extraordinary turnarounds from *Earth for All*, *Designing Regenerative Cultures*, *Doughnut Economics*, *Life-Ennobling Economics*, and E.O. Wilson's concept of *Half-Earth*. We will devote the last two weeks to implementing our research to envision/design the sustainable city.

- Potential subject areas
 - Preserving Earth's systems
 - Half-Earth
 - Nature-based solutions,
<https://www.naturebasedsolutionsinitiative.org/>
 - Earth For All Framework
 - Reducing Inequality
 - Ending Poverty
 - Empowering women
 - Ensuring a nutritious and ecologically healthy food supply
 - Ensuring a just transition to renewable energy
 - Doughnut Economics and Life-Ennobling Economics
 - City Portraits
 - Supporting people while not exceeding planetary boundaries
 - Urban systems designed for sustainability

- Readings include:
 - Designing Regenerative Cultures
 - Cities and Sustainability
 - Cohen, Steven and Guo Dong, *The Sustainable City*, 2021.
 - Dark Matter Laboratory, www.darkmatterlabs.org
 - Speculative Futures
 - Johanna Hoffman, *Speculative Futures*, North Atlantic Books, 2022.
 - Just Transitions
 - Ghosh, et al, A just transition: how can we fairly assign climate responsibility? Earth For All, 2022
 - The Green New Deal Resolution
<https://www.congress.gov/116/bills/hres109/BILLS-116hres109ih.pdf>
 - Wu, Michelle (Boston City Councilor), Planning for A Boston Green New Deal & Just Recovery, August 2020
 - Climate Justice Alliance, Just Transition Principles,
https://climatejusticealliance.org/wp-content/uploads/2019/11/CJA_JustTransition_highres.pdf
 - An Equitable and Just Climate Platform (2019)
<https://ajustclimate.org/>.
 - <https://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html> (see below for source article)
 - A People's Orientation to a Regenerative Economy United Frontline Table (June 2020) <https://climatejusticealliance.org/wp-content/uploads/2020/06/ProtectRepairInvestTransformdoc22x.pdf>.

“Things look bleak. The propensity to despair is strong but should not be indulged. Sing yourself up. Imagine a world in which you might thrive, for which there is no evidence. And then fight for it.”

Gary Younge

Sustainability calls for a deep transformation in all aspects of human activity including our worldview, our values, our technology, our governance, and more.

Michael Ben-Eli

I believe that life is chaotic, a jumble of accidents, ambitions, misconceptions, bold intentions, lazy happenstances, and unintended consequences, yet I also believe that there are connections that illuminate our world, revealing its endless mystery and wonder.

David Maraniss

ASSIGNMENTS AND GRADING

1. Introductory statement (5 points)

Please write a CONCISE statement no longer than 500 words on what your vision for a just, habitable, equitable, and sustainable city (world) in the year 2050 looks like. Due: by Sunday, September 15, 11:59PM.

2. Class participation/discussion leading/questions (25 points).

The path out of climate change and inequity to thriving cities demands your best thinking, your willingness to hear other people and to learn from them.

Please note that this class is a seminar; its success depends on your willingness to come to class having completed the reading, watched the appropriate episodes, thought about questions for discussion, and being prepared to participate in class. I ask that you turn off all electronic devices, including laptops, while you are in class.

a. General Requirements:

- i. Students are expected to participate in every class.
- ii. Submit questions about the reading for discussion five times during the semester. These are due by 8 p.m. the night before class.

3. Semester Project: Stepping Into the Future: Envisioning/Designing a Sustainable, Habitable, Just, and Equitable City (World) (70 points)

NOTE: This assignment is a semester-long progressive project with multiple parts and deadlines.

a. General Requirements

The purpose of the project reflects the course theme: envisioning a sustainable, habitable, just, and equitable world. Using Collins' and Porras' methodology – core values, enduring purpose, Big Hairy Audacious Goals, and Vivid Description – envision this new world and bring it to life.

- i. Individual write up (35 of 70 points)

b. Class Project

- i. Class Project (35 of 70 points)
 - 1. Research quality (20 of 35 points)
 - 2. Participation (15 of 35 points)

c. Individual Write-up (35 of 70 points)

i. Format

You are encouraged to use art, video, graphic novels, storytelling, podcasts, mapping, text, or some other means to convey your ideas.

ii. Length

As a semester-long project, the product must reflect the semester's effort and understanding.

- iii. Short integrated statements at end of Modules 2 and 3

- a.* Summarize lessons learned at the conclusion of each of the first three course modules. (see Canvas) Think, for example, how identifying issues can be used to envision the future. It may be useful at the outset to envision the outcome of the project, so each statement is more easily integrated into the whole.
 - b.* Each of these should be written so that they can be easily revised to be incorporated into the final assignment.
 - c.* Each should identify the data gaps needed to be incorporated into the final story.
 - d.* For the three statements, you are expected to spend roughly 3-4 hours preparing and writing (this will vary per individual writing styles/speeds). Keeping up with readings will help this go faster.
 - e.* Due dates and any special instruction are located by day on Canvas.
- iv. Final Submission
 - a.* The final project can be submitted anytime before the end of the semester, December 22. Due to the demands of individual final schedules, travel schedules, holidays, and general exhaustion, I will accept them through December 31 without penalty. I would rather have you take your time to produce a vision that reflects your values, scholarship, research, and beliefs.