

URBS 2900 – METROPOLITAN NATURE

Thriving Cities

Note: This is the syllabus for 2023 and is for preregistration only. It will change.

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Mondays, 1:45-4:45

COURSE PRINCIPLES:

1. Envisioning

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

If we haven't specified where we want to go, it is hard to set our compass, to muster enthusiasm, or to measure progress. But vision is not only missing almost entirely from policy discussions; it is missing from our culture. We talk easily and endlessly about our frustrations, doubts, and complaints, but we speak only rarely, and sometimes with embarrassment, about our dreams and values.

Donella H. Meadows,

We must envision what a just society with an equitable economic system will look like. Only then can we begin to bring a sustainable world lovingly into being.

2. Systems Thinking

We are all interconnected. The course is based in Systems Thinking as presented by Donella Meadows. One of my mentors, Sister Clare Tjader, Religious Assumption, tells a story about a Hindu monk who had an adjoining carrel when they were scholars at the British Museum. He said to her, "You Westerners tear things apart to try to understand them. We Easterners contemplate them until we become one with them."

Systems thinking aims to comprehend the world holistically by examining the entire system and managing the interaction between the parts. It aims to comprehend the world by identifying and solving root causes, not symptoms. For example, climate destabilization is a symptom, not a cause. If you define the problem as too much CO₂ in the atmosphere, the obvious solution is to reduce CO₂ in the atmosphere. If you, however, recognize that our voracious appetite for consumption is destroying the Earth's resources and systems that support

life, and consequently we are drowning in our waste products, including CO₂, then an entirely different set of solutions may become available. Systems thinking is a tool for comprehending the world

3. New Vocabulary, New Rules

Using systems thinking vocabulary, we describe the world in terms of thresholds, feedback loops, socioecological systems. According to James Kay, the new rules include:

- There is no one correct answer only possibilities. This dictates a new way of being in the world which is broadly participatory. We must learn to listen and incorporate other viewpoints.
- We cannot predict the future, only prepare for alternative futures.
- Expect novelty and surprises.

4. Solving the Correct Problem

Our problem definition dictates the range of solutions that are available. We must work diligently to define the problem that allows solutions that in turn solve our problem. Wendell Berry cautions us that solutions should respect the limits of discipline, in other words, solve agricultural problems with agricultural solutions, not technological or economic ones. Good advice. But, Earth for All demonstrates that sometimes the problem does not lie within the discipline in which we first place it. The problem of climate destabilization is not strictly an Earth Systems problem because it is part of a linked set of problems, a polycrisis. Instead, Earth for All views climate destabilization as a consequence of our global economic system. Therefore, the solutions lie in developing a more just economic system that recognizes people's needs and planetary boundaries.

5. Com-prehending the World

We must learn to **Com-Prehend the World**, i.e. see the world accurately and in its totality

6. A Different Path: Thriving Lives, Thriving Cities

To thrive, we must remain below our planetary boundaries and thresholds yet provide for people's basic needs. Contemporary research identifies nine planetary boundaries or thresholds beyond which the Earth will tip into a different regime or state with a different set of operating rules. The boundaries are: climate change, biodiversity loss, ocean acidification, ozone depletion, atmospheric aerosol pollution, freshwater use, biogeochemical flows of nitrogen and phosphorus, land-system change, and release of novel chemicals. If the current planetary operating rules are to be kept intact, we must develop practices that remain within the boundaries.

We must also meet people's social needs.

7. We Are Moral, Ethical, and Spiritual Beings, Not Just Rational, Scientific Ones. A prevailing paradigm of the 20th Century was *Homo economicus*, the figurative human being characterized by the infinite ability to make rational decisions (Investopedia). Behavioral psychology tells us that we are, more often than not, irrational decision makers. Our current predicament is an issue of our values far more than it is a scientific one. Note, for example, that at the heart of the world's spiritual traditions lies suffering and a path out of it. They embrace meaning in the world around us through traditions and rituals which celebrate the Earth. They also emphasize wonder and awe for our common home. Our spiritual leaders have great wisdom and offer us hope in our current predicament

TEXTS:

- Crawford, Susan, *Charleston: Race, Water, and the Coming Storm*, Pegasus Books, 2023.
- Meadows, Donella, *Thinking in Systems*, Chelsea Green, 2008. (ER on Canvas)
- Lake, Osprey Orielle, *The Story Is in Our Bones*, New Society Publishers, 2024.
- Linton, Tim, *Earth Systems Science: A Very Short Introduction*, Oxford University Press (online through Penn Libraries)
- , Daniel, *Free and Equal*, (ER)
- Raworth, Kate, *Doughnut Economics* (ER)
- Earth For All, New Society Publishers, (online through Penn Libraries)
- Johanna Hoffman, *Speculative Futures*, North Atlantic Books, 2022.

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 Butynsky, *Watermark*, 2017. (Amazon Prime)
- Baichwal, Jennifer and Edward Butynsky, *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 the day.

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

Module 1: Defining the Problem

- September 11: What is the problem we are trying to solve?
 - Readings
 - Meadows, Donella, *Envisioning a Sustainable World*
 - Lake, Osprey Orielle, *The Story Is in Our Bones*, Part 1, pp 1-84.
 - 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 five (5) 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.
 - 5. 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
 - Planetary Boundaries
 - Values
- September 17, Sunday evening 11:59PM
Assignment 1, Introductory Statement: Envisioning a Sustainable, Resilient, and Just World.
- September 18 and September 25: Our Current Predicament
 - Readings:
 - Crawford, Susan, *Charleston: Race, Water, and the Coming Storm*
 - What are the economic, justice/ethical, and environmental issues that Crawford presents?
 - Summarize how Susan Crawford describes how the game is rigged.
- October 1,
 - **Integrated Statement #1, Problem definition.**
 - **Due: Sunday Night, October 1 at 8:00PM**

Module 2 – Systems Thinking – Leveraging the System – From Problems to Possibilities

“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

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

- October 2 and 9 Assessing the Problem and Defining the System.
 - Readings
 - Meadows, Donella, *Thinking in Systems*, Chelsea Green, 2008. (ER)
 - 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*
 - Lawrence, Michael, et al. “Global Polycrisis: The causal mechanisms of crisis entanglement” Version 1.0. Pre-print. *Cascade Institute*.
<https://cascadeinstitute.org/technical-paper/global-polycrisis-the-causal-mechanisms-of-crisis-entanglement/56rt>
 - 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: Eastwick, Water Always Wins
 - Lecture: Principles of Urban Water
- October 16 Earth Systems Science
 - Readings
 - Linton, Tim, *Earth Systems Science: A Very Short Introduction*, Oxford University Press (Available online through Penn Libraries)
- October 22
 - **Integrated Statement #2, Problem definition revised with systems thinking principles.**
 - **Due: Sunday Night, October 22 at 8:00PM**

Module 3 – Envisioning a Sustainable World with a Just Economy

- October 23: Envisioning a Shared Earth
 - Readings:

- *Earth For All: A Survival Guide for Humanity*
- October 30: Envisioning a Just Future
 - Readings:
 - Chandler, Daniel, *Free and Equal: what would a fair society look like?* (selections)
- November 6 and November 13: Envisioning a Just Economy
 - Readings:
 - Raworth, Kate, *Doughnut Economics*
 - Daly, Herman, Economics in a Full World, *Scientific American*, 2005
 - Fullerton, John, “Regenerative Economics: How Universal Principles and Patterns Will Shape Our New Economy,” 2015.
 - City Portraits: Amsterdam
 - Degrowth (TBA)
 - 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/>
- November 19
- **Integrated Statement #3,**
- **Due: Sunday Night, November 19 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

During the last four classes we will step into the future to experience what the polycrisis means to us

- November 20 and 27 Speculative Futures
 - Reading
 - Johanna Hoffman, *Speculative Futures*
- December 3 Just Transitions
 - Readings
 - 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>.
- December 11 Values
- The Final Project

"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

- Readings

- Collins and Porras, “Building Your Company’s Vision,” *Harvard Business Review*. (From the first week)

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

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 world in the year 2050 looks like. Due: by Sunday, September 17, 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. We ask that you turn off all electronic devices, including laptops, while you are in class.

Detailed instructions for leading discussions are located on CANVAS. Make sure you read them.

a. General Requirements:

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

b. Guidelines for Discussion Leadership

- Each student will select **two class sessions** during which they will lead the discussion.
- Group members will meet to prepare material and plan discussion before the assigned class session. In addition to discussing the assigned readings, group members should choose at least one supplemental resource on the internet to share with the rest of the class. The resource should somehow relate to the week’s theme. It might be a recent news item, a blog posting, an organization’s website, a brief video, etc. It should connect to content that illustrates, illuminates, or in some other way expands on the

readings. For your assigned session your group will be responsible for creating a link on our course blog to your resource, a handout, and for leading in-class discussion.

- c. Please make note of the dates you will be leading class discussion *and* your group members and email addresses so that you can meet prior to class to work on the questions and plan how you would like to use class time.

NOTE: Plan ahead! And allow sufficient time for everyone to be able to find a suitable meeting time!

- d. Elements of the Group Presentation

- i. Outline – For each class session, your group should create an outline of the texts that you will use to synthesize the readings and highlight important points for discussion. Possible strategies for writing your outline include (a) identifying and clarifying each author’s main argument (b) reflecting on themes that cut across readings, (c) examining the assumptions and evidence that different authors use, and/or (d) relating the week’s readings to other material from the course.
 - ii. In addition to the textual analysis, the outline should also include the following:
 - 1. A *list* of key concepts, themes or points you identify that cross-cut the readings and films (list and define these. You do not need to identify all main points—but what you determine to be the most important ones—the key concepts that will be the focus of the discussion you will lead in class.)
 - 2. *Key passages*: Transcribe three to five passages from the readings and explain how they relate to the main points or why they stand out as significant.
 - 3. *Discussion questions*: List 3-4 thought-provoking questions for discussion in class.
 - 4. *Link*: Post a link to a resource you find on the internet that illustrates or somehow relates closely to the session’s theme and add a discussion of why you find it significant/interesting in relation to the readings and films. This can be a short video on YouTube, a website, a news article, a blog, etc.
 - 5. (optional) Add reflections, reactions, anecdotes or other related commentary related to the readings that your group would like to share with the class.
- e. Leading in class— Finally, given your additional advance preparation and group discussion you will be expected to lead 60-75 minutes of the class session.

- i. Presenting your outside source—Your group should prepare a VERY BRIEF presentation to share the external resource you have found and posted to the Discussion Board. This presentation should in some way highlight connections that you see to issues of focus in the readings.
- ii. Leading discussion—You should have a flexible plan for guiding our discussion through the key elements of the week’s readings. Also, be prepared to share your insights about the answers to these questions. Think of creative ways to get discussion going. Do you want students to first discuss in pairs or small groups and then report back? Do you want everyone to address the same question? Do you want to organize a debate? It’s a good idea to come prepared with at least four topics to address or questions to pose during the class. Make sure that your questions or topics for discussion are tied closely to the readings and highlight some of what you consider to be key themes or issues. Below are some ideas to help you and your group generate good discussion themes:
 1. Use the reading process and central questions of the course as a guide.
 2. Ask questions that are based on specific portions of assigned readings. These might be questions that ask students to discuss their reactions to these passages or to take a position on a controversial topic.
 3. Ask analytical questions (usually starting with “why,” “how”)
 4. Challenge other students to make connections to previous readings. Be prepared to model with an example of connections you find to be interesting.
 5. Share your own personal reactions to one of the readings and ask students to respond.
 6. Once you have posed a question to the class, if there is no immediate response, give it some time . . . wait for students to gather their thoughts and respond. If it seems particularly difficult to generate discussion, do not abandon your question and move to the next—take a different angle: for instance, you might allow students to reflect in silence and write a brief response on paper, then ask students to share their ideas.
 7. BE CREATIVE! –Most of all, think creatively about how to engage all the class participants in a discussion and

in a process that will lead to greater understanding of key ideas.

PLEASE NOTE: These are the basic responsibilities for groups leading class on a given day. Each class session will be different. This is why each group must meet in advance to plan for the class.

2. Semester Project: Stepping Into the Future: Envisioning a Sustainable, Habitable, Just, and Equitable 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. The format

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

- 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 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. Presentation of the draft concept

- a.** During the last class on December 12, a selected number will present drafts of the concepts for the final project.

v. 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.