

UP 136 | Urban Sustainability | Fall 2020

Department of Urban and Regional Planning

Instructor: Dustin Allred, dallred2@illinois.edu

Time: T, Th, 2:00pm – 3:20pm

Location: Online

Office Hours: Tues 1:00pm – 2:00pm Online via Zoom

Course Description

The world is an increasingly urban place and so what happens in cities – how they operate and change over time – takes on a growing urgency for the sustainability of life on earth. Already, more than half of the world’s population lives in cities and it is estimated that an additional 75 million people will be added to urban areas each year. As a result, the direction that cities take – how they accommodate this growth and manage existing settlements – is a critical factor in achieving global sustainability. Cities are both beacons of opportunity and advancement for much of the world’s population, and the drivers of unsustainable lifestyles and practices that are depleting resources and degrading natural systems. For over a century, urban planning and other modern academic disciplines have provided decision-makers the tools to eliminate or very dramatically reduce the threat of communicable disease, fire, and industrial contamination that plagued early industrial cities. Today, urban populations are larger, healthier, more mobile, and better connected to the global economy than ever before. Our industrial food system delivers affordable nutrition thousands of miles from its source. Energy extraction regimes are developing ever-more efficient ways to harness and deliver energy resources from miles beneath the earth’s surface. These triumphs are predicated on highly specialized knowledge and humanity’s ability to manipulate natural processes. It has become increasingly evident, however, that this manipulation threatens the global systems of which we are an inextricable part. Global climate change, energy and resource scarcity, the decline of life-supporting ecosystems, and the growing disparity between wealthy and poor communities are as much the result of modern human successes as they are a major contributor to current and future community devastation. Increasingly, urban and regional planners will have to confront these contradictions and address issues that are rooted in activities far away in space (across the globe) and time (decades or centuries ago). **How can we create healthy, safe, resilient and inclusive communities without compromising the ecosystems upon which all life depends? What can planners and policy makers do to realize a high quality of life in our cities without further damaging the earth’s ecosystems or consuming resources at an unsustainable rate?**

This course will explore ways we can begin to resolve these global, regional and local issues of unsustainable development priorities by better understanding how and where we chose to live. The course is 16 weeks long and divided into **four** parts, or units. The course will start with the basics of the sustainable development challenges facing urban areas and then move through three scales at which planners engage with these issues: the regional or metropolitan scale, the neighborhood or community scale, and the individual household scale.

Unit I – Global Sustainability Issues and Debates

In **unit one**, we will start by looking at global development trends driving concerns about urban sustainability – unsustainable consumption, planetary boundaries and the basic science of climate change. We will examine how human settlements have changed throughout time, and how more recent human activity has compromised global ecosystems. We will discover that **where and how** humanity has chosen to live has resulted in grave conflicts between human and non-human life as well as amongst different human communities. These conflicts (i.e. the tensions between our energy production systems and rapidly changing global climate) and new environmental realities have begun forcing us to reconsider how and where we build cities.

Many of these conflicts are the result of **specific human decisions** that can be reversed and re-considered. In the remainder of the course, we will learn about these decisions taken at various urban scales, and alternatives that allow cities and their inhabitants to meet basic needs without further damaging the ecosystems upon which we depend. We will also learn the difference between merely “green” solutions and more profound changes in physical and social structures.

Unit II – Regional Urban Systems

In *unit two*, we will zoom in to the regional scale to gain a more nuanced understanding of water management, land use, transportation, and housing systems and how these systems have historically conflicted with natural ecosystems. We will explore how existing alternatives can better take advantage of nature’s free ecosystem services without further destroying them.

Unit III – Sustainable Urban Neighborhoods

Unit three will explore neighborhood-scale decisions and how they influence our day-to-day lives. This unit is design-focused and will therefore cover rubrics such as Leadership in Energy and Environmental Design (LEED), and techniques to conserve and harness energy at the local scale. This unit will also address how we plan for resilient cities in the face of a changing climate.

Unit IV – Green Buildings and Individual Choices

Unit four considers how site level and individual, day-to-day consumption decisions have an influence on the environment. We will discuss site layout, low-impact interior design, and transportation choices.

Course Objectives

Throughout the semester, students will:

1. Develop a more **critical, multi-scaled perspective** about decisions in the built environment
2. Build a **vocabulary** and the **ability to communicate** about the built environment, sustainability, and sustainable development
3. Engage in critical **self-reflection** about *where* and *how* they live
4. Become an **agent** for positive social and environmental change and contribute substantially to local knowledge of sustainability

This course also prepares students for subsequent courses on sustainability in the Department of Urban and Regional Planning to include UP 205: Ecology and its Applications, UP 405: Watershed Ecology and Planning, UP446: Sustainable Planning Seminar, UP456: Sustainable Planning Workshop, UP466: Energy, Planning, and the Built Environment, and UP480: Sustainable Design Principles.

Course Format

This is a 3-credit hour course. Including attending the 1 hour of synchronous class discussion per week, you should dedicate approximately 9 to 10 hours per week to working on the course itself, but actual time commitments will vary depending on your input, needs, and personal study habits. You are required to log on to the course website on Tuesdays and Thursdays, but as the course progresses, you will probably need to do so more frequently. The course is delivered through a mix of teaching and learning methods including online lesson materials, peer-led discussions and guest lectures conducted via Zoom, self-guided tours, assignments, and projects. The course is organized around 13 weekly lesson modules. Most modules will follow the following format:

1. **Read:** *Assigned readings for the lesson module.*
2. **Understand:** *Course online lecture materials.*
3. **Reflect:** *Your summary of the lesson's readings and response to guiding questions.*
4. **Discuss:** *A **synchronous** online discussion of the lesson material facilitated by a classmate.*
5. **Do:** *A task and/or activity related to an urban sustainability assessment activity.*
6. **Conclude:** *A quiz at the conclusion of each weekly module.*

A detailed weekly schedule is included in the syllabus. The course will be managed through **Illinois Compass** (<https://compass2g.illinois.edu>). The organization of the course on Compass mirrors the format above. Students can make their way through the weekly material (readings and online lecture materials) at their own pace according to the deadlines found in Compass. Each Thursday the class will gather on a Zoom meeting for a student-led discussion. Participation in the discussion is required and attendance will be taken.

Instructor Responses

Assessment Feedback Turnaround Time: All assessments will be graded through Compass2g. Please reference your grade book frequently to ensure your assessments are being submitted properly and that you are earning grades for your work. Reading Reflections will be graded within 1-2 days of submission. Please allow 1-2 weeks for all other assignments.

Responding to E-mails: The instructor will respond to e-mail messages within 24 hours of receiving them Monday through Friday 9am -5pm central time. Saturday and Sunday, I will continue to check email, but the response time may take up to 48 hours.

Reading Reflections Blog and Discussion Leader Roles

Reading Reflections: Reflections on the week's upcoming assigned readings must be submitted to the **Reading Reflections Blog** on Compass by **11:00pm on the Tuesday** of each week. These submissions are meant to demonstrate your engagement with course material and provide feedback to me about ideas or concepts that may be confusing or need further explanation. Your reflections should be written in paragraph form and respond to the following prompts:

- Reading #1: Title...
 - What do YOU think is the author's main point?
 - What did you like about the paper? What did you not like about the paper?
 - Identify some aspect of the reading that made an impression on you (new fact, enlightening observation, new twist to an old idea, writing style, relationship to another reading, etc.).
 - State one question you would like to ask the class, or one aspect of the reading that you did not understand.
- Reading #2... : Title... repeat... items 1 through 5.

In addition to responding to the above prompts for each reading you will be given a **Weekly Reflection Question** for the week's module – found on Compass. The **Weekly Reflection Question** is found in the **REFLECT** folder of each weekly lesson module in Compass. This question is different from the guiding questions listed on the summary pages for each reading. Those questions are there to help you focus on the important ideas and concepts in each reading. In contrast, the **Weekly Reflection Question** is intended to encourage you to think critically about what you have read and what the authors are telling us about urban sustainability. A brief response to this question should be included in your post.

Discussion Leaders: Each week has an assigned **discussion leader(s)** tasked with coming up with questions and/or materials that prompt a discussion among the class. The task of the discussion leader(s) is to both **develop and post this material to the discussion board**, as well as **facilitate the discussion** - which in a remote learning format will be conducted via a Zoom meeting. Unless otherwise notes, the discussion will occur during the scheduled class time on Thursday each week.

The first task for the discussion leader(s) is to submit their discussion materials to the "**Submit and Vet Discussion Materials**" assignment below by **5:00 PM on Wednesday** of that week to be reviewed by the instructor. The instructor will reply to the discussion leader(s) either approving the materials or suggesting edits/additions.

Once the instructor has worked with you and approved the question(s) and/or discussion materials you are ready to facilitate the discussion during our Thursday class session. Come to the session prepared to facilitate a 30 to 45-minute discussion on the week's topic using a mix of questions and/or activities. Be creative about how you do this! Breaking the class into smaller groups via break out rooms to maximize participation is highly encouraged. Additional materials such as relevant newspaper articles or videos can also be used to engage your classmates. **If there is more than one discussion leader be sure to coordinate your efforts prior to the class session.**

Course Evaluation

There will be weekly quizzes and a final exam on the material covered in the readings and lectures. There will also be a semester long project that culminates with a final report and presentation. Class participation will be based on discussion session attendance, in addition to your performance as discussion leader. If you must miss a class session due to special circumstance such as illness or family emergency, you should notify me via e-mail (dallred2@illinois.edu) as soon as possible. More than two (2) unexcused absences will result in an automatic drop of ten (10) percentage points from your final grade. All assignments should be submitted to Compass on the due date unless otherwise noted. Late assignments will be graded down one letter grade per day (half a letter grade if turned in after class on due date). Grade percentages will be distributed as follows:

| | | | |
|---------------------------------------|-----|---------------------------|-----|
| Class participation/discussion leader | 15% | Final exam | 20% |
| Reading reflections | 20% | Sustainability assessment | 15% |
| Weekly quizzes | 20% | Public meeting reflection | 10% |

Transformation of numerical grade to letter grade will be according to the schedule below:

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

The general grading rubric for assignments is as follows:

An “A” assignment demonstrates original thought and synthesis of ideas and sophisticated, cogent analysis. It is clearly written and presented.

A “B” assignment includes above average analysis with appropriate evidence to support ideas. It is clearly written and presented.

A “C” assignment shows a basic level of understanding, with analysis limited to obvious arguments. Writing is competent. It is adequate work.

A “D” assignment misunderstands or misrepresents the material or is so poorly written that it obscures the analysis. It is inadequate work.

Class discussion participation (7.5%) and discussion leader (7.5%) (15% total): You are expected to be an engaged participant in class and a thoughtful and prepared discussion facilitator on your assigned day. **Attendance will be taken every class discussion session.** Your role as a discussion leader will be graded based on timeliness and thoughtfulness of submissions, relevance of moderated discussions to the assigned readings, and your ability to engage a broad section of the class.

Reading reflections blog (20% total): Weekly posts to Compass that demonstrate your familiarity with that week’s readings and give you the opportunity to reflect on what you are learning. I will review your posts throughout the semester and assess a final grade based on following directions (responding to prompts) and the completeness of the task.

Public meeting reflection (10%): Students will attend a virtual public meeting in the local CU area where sustainability issues are discussed. Students will take notes and describe how city planners, developers, and residents are addressing the challenges and conflicts of realizing a sustainable urbanism.

Weekly quizzes (20%): Weekly quizzes will be facilitated online through the course Compass site. Quizzes must be completed by **5:00PM** on the Friday of each week. These quizzes will focus on the **critical terms and concepts** that will also appear on your final exam. The quiz questions come from the “review” questions at the end of each online lecture. It is therefore in your best interest to complete the quiz independently.

Final exam (20%): Your final exam will evaluate your understanding of the most important concepts taught in this course.

Sustainability assessment project (15%): In this project you will apply the concepts and ideas from the course as a way to better understand the sustainability issues in your hometown. The project consists of two assignments. Assignments correspond to course units looking at regional

and local sustainability issues. Students will also provide peer review and feedback of your classmates submissions. Students will present on their assessments at the end of the semester.

Readings

You can access all required readings on **Illinois Compass**. Readings are listed by week (“lesson” modules in Compass) in the schedule below. Reading for this class is imperative for contribution to discussion. Failure to keep up with required readings seriously inhibits learning and will most likely reflect poor performance on assignments and exams, as well as the evaluation of your in class participation.

Course Policies

Student conduct: From the University Student Code, Article 1, Part 3: Students enrolling in the University assume an obligation to conduct themselves in a manner compatible with the University’s function as an educational institution and suitable to members of the academic community. Students are responsible for knowing their rights and responsibilities as found in the student code at <http://www.admin.uiuc.edu/policy/code/index.html>.

The effectiveness of this course is dependent upon the creation of an encouraging and safe classroom environment. Exclusionary, offensive or harmful speech (such as racism, sexism, homophobia, transphobia, etc.) will not be tolerated and in some cases subject to University harassment procedures. We are all responsible for creating a positive and safe environment that allows all students equal respect and comfort. I expect each of you to help establish and maintain an environment where you and your peers can contribute without fear of ridicule or intolerant or offensive language.

Special Circumstances: Due to the participatory nature of this course, please communicate any expected or unexpected absences with the instructor as early as possible. Every effort will be made to work with students with unusual or unexpected obligations outside the course (family emergencies, health issues, participation in University sanctioned activities, etc.) Students with disabilities or special needs who require any accommodations to facilitate full participation and completion of the course should contact the instructor as soon as possible. Please refer to the Disability Resources and Educational Services at <http://www.disability.illinois.edu> for more information.

Safety and Security in the Classroom: Emergencies can happen anywhere and at any time. It is important that we take a minute to prepare for a situation in which our safety or even our lives could depend on our ability to react quickly. When we’re faced with any kind of emergency – like fire, severe weather or if someone is trying to hurt you – we have three options: Run, hide or fight. Please refer to the General Emergency Response Recommendations at

<http://police.illinois.edu/dpsapp/wp-content/uploads/2016/08/syllabus-attachment.pdf> for more information.

Tips for Success

To do well in this course, remember the following:

- Log in frequently to manage your success at least 2-4 times per week (but feel free to access the course content as much as you want and/or need!). If you let the expectations of the course pile up, you may become overwhelmed.
- Consider using a word processing application to create and save all your work so that you have an automatic backup copy of all your assignments. This will also be useful in the unlikely event that our server goes down and we are unable to access course submissions. In this situation, you are still required to keep current on all your tasks and must be prepared to submit completed materials as soon as submission capability is restored.
- It is very important that you communicate throughout the course, especially during group projects. If you are having difficulties with something or are going to be away from the computer because of illness or a family emergency (or similar difficulties), please inform your group and the instructor as soon as possible. This will keep the instructor from worrying about your whereabouts and your group members from resenting the fact that the work delegated to you is not being done.

Schedule and Required Readings

Unit I – Global Sustainability Issues and Debates: In this unit, we will introduce the key terms, fundamental issues, and debates of urban sustainability. We will discuss the concept of planetary boundaries and the basic science of climate change and its relationship to human activities. We will examine how human settlements have changed throughout time, and how recent human activity (e.g. how and where we live) in particular threatens global ecosystems.

- Week 1 – What is urban sustainability?
 - ❖ Themes: Course introduction, urban, sustainability, ecological vs. technical sustainability
 - ❖ Readings
 - i. Orr, David. 1988. 'Two Meanings of Sustainability'. Chapter 11 in *Hope is an Imperative*. Island Press. (2011).
 - ii. Robinson, J. 2004. Squaring the Circle? Some thoughts on the idea of sustainable development. *Ecological Economics*. 48. 369-384.
 - iii. Tidwell, Mike. "To really save the planet, stop going green." *Washington Post*. (Dec 6, 2009): B1.
 - iv. Ross, Andrew. 2011. "The dark side of the 'green' city." *New York Times*. 7 November 2011.
- Week 2 – Natural systems in crisis
 - ❖ Themes: Climate change, biodiversity, ecological footprint, natural capital
 - ❖ Readings
 - i. World Wildlife Fund. 2012. *Living Planet Report 2012: Biodiversity, biocapacity, and better choices*.
 - ii. Orr, David. 2009. *Down to the Wire: Confronting Climate Collapse*. Oxford University Press. Introduction (pp. 1-9)
 - ❖ Assigned: Project Step 1 – Review the project description and requirements
- Week 3 – Climate change causes and effects
 - ❖ Themes: Greenhouse gas emissions, energy resource extraction and production
 - ❖ Readings
 - i. Black, Richard. 2011. "Polar ice loss, quickens, raising seas." *BBC News: Science & Environment*.
 - ii. Smil, Vaclav. 2006. *Twenty-First Century Energy: Some sobering thoughts*. *OECD Observer*. No. 258/59.
 - iii. Podesta, John and Romm, Joseph. *The need to beat our oil addiction*. *Politico*. May 3, 2010.
 - iv. Porter, Eduardo. 2017, Jan 18. On climate change, even states in forefront are falling short. *The New York Times*, <https://nyti.ms/2jVqHEz>.
 - v. Maykuth, Andrew. 2011. "Marcellus Shale gas development fueling PA boom." *Philadelphia Inquirer*. 1 Apr 2011.
 - vi. Broder and Krauss. 2011. "US offers key support to Canadian pipeline." *New York Times*. 26 August 2011.
 - ❖ Assigned:

- i. Project Step 2 – Choose a location to study for your project
- ii. Public Meeting Reflection

Unit II – Regional Urban Systems: In this unit, we will start looking at how we plan for urban sustainability at the regional or metropolitan scale. Local plans have regional impacts. Water management, land use, transportation, and housing systems have historically been the responsibility of individual cities, creating externalities and inefficiencies that unnecessarily contribute to urban sprawl and degrade natural systems. We will explore alternatives that coordinate urban growth at the scale of labor markets, commute sheds to better take advantage of nature’s free ecosystem services without further destroying them.

- Week 4 – Urban development trends, trajectories, and impacts
 - ❖ Themes: Suburbanization, sprawl, placelessness
 - ❖ In class video: James Howard Kunstler, TED Lecture: the Tragedy of Suburbia (<http://video.google.com/videoplay?docid=-3057280178909051497#>)
 - ❖ Readings
 - i. Jackson, Kenneth. 1985. “The Drive-in Culture of Contemporary America” The Crabgrass Frontier: The Suburbanization of the United States. Pp. 59-68 in LeGates, R.T. and Stout, F. The City Reader 4th Edition. Routledge: New York.
 - ii. Dudley, Michael Quinn. 2001. Sprawl as Strategy: City Planners Face the Bomb. Journal of Planning Education and Research. 21: 52-63
 - ❖ Assigned: Project Step 3 – Assignment 1
- Week 5 – The regional dilemma
 - ❖ Themes: Fragmentation, tragedy of the commons, interurban competition, green infrastructure, watersheds
 - ❖ Readings
 - i. Hardin, Garrett. 1968. Tragedy of the Commons. Science. 162.
 - ii. Worster, Donald. "Watershed Democracy: recovering the lost vision of John Wesley Powell
 - iii. Wines, Michael. 2014. Colorado river drought forces a painful reckoning for States. New York Times, Jan. 5, 2014.
 - iv. Benedict, M.A. and McMahon, E.T. Green Infrastructure: Smart Conservation for the Twenty-First Century. Sprawl Watch Clearing House Monograph Series.
- Week 6 – Regional planning and sustainable growth
 - ❖ Themes: Growth management, smart growth, VMT, regional coordination, regional equity, environmental justice
 - ❖ Readings
 - i. Reid Ewing, Keith Bartholomew, Steve Winkelman, Jerry Walters, and Don Chen, Growing Cooler: The Evidence on Urban Development and Climate Change. Washington: Urban Land Institute, 2008.
 - ii. Wheeler, Stephen M. 2000. Planning for Metropolitan Sustainability. Journal of Planning Education and Research. 20: 133.

- iii. Villarosa, Linda. 2020, August 2. The refinery next door. *New York Times*. <https://nyti.ms/2Bzkhcu>
- Week 7 – The challenges and opportunities of demographic change
 - ❖ Themes: Aging in place, household size, housing preferences
 - ❖ Readings
 - i. US Census Bureau. Census Explorer. <http://www.census.gov/censusexplorer/>
 - ii. Katz, Bruce and Rodin, Judith. “An impending national transformation.” POLITICO. May 9, 2010. 07:38AM. http://www.politico.com/news/stories/0510/36963_Page2.html
 - iii. Arieff, Allison. 2017, January 29. A housing crisis for seniors. *New York Times*, <https://nyti.ms/2jIPY4R>.
 - ❖ Self-guided tour of the Boneyard Creek Second Street Basin project

Unit III – Sustainable Neighborhoods: In this unit we will explore neighborhood-scale decisions and how they influence our day-to-day lives. This unit is neighborhood design-focused and will therefore cover rubrics such as Leadership in Energy and Environmental Design (LEED) that focus on creating sustainable communities, and techniques to conserve and harness energy at the local scale. You will have a chance to seek out examples of sustainable neighborhoods and reflect on how the built environment of your own community facilitates or inhibits sustainable lifestyle choices. This unit will also address how we plan for resilient cities in the face of a changing climate.

- Week 8 – Sustainability at the community scale
 - ❖ Themes: Urban design, community development
 - ❖ Readings
 - i. Holland, Marc. The eight pillars of a sustainable community. HB Lanarc.
 - ii. Huler, Scott. 2010. “Introduction: Raleigh versus the garbage disposal.” Chapter 1 in *On the Grid: A plot of land, an average neighborhood, and the systems that make our world work*. Rodale Inc.
 - iii. Farr, Douglas. 2008. *Sustainable Urbanism: Urban design with nature*. New Jersey: John Wiley & Sons. Pp. 125-138.
 - iv. Duany, Plater-Zyberk, and Speck. Chapter 10 “How to make a town” in *Suburban Nation*.
 - v. The City of Urbana Climate Action Plan (skim)
 - ❖ Assigned: Project Step 4 – Assignment 2
 - ❖ **Due: Project Assignment 1 – Exploring Regional Sustainability**
- Week 9 – Urban transportation systems and healthy cities
 - ❖ Themes: Transit, environmental justice, equity, complete streets, walkability
 - ❖ Readings
 - i. Agyeman, Julian, Robert D. Bullard, and Bob Evans. 2002. Exploring the nexus: bringing together sustainability, environmental justice, and equity. *Space and Polity* 6(1): 77-90.

- ii. Campbell, Scott. 1996. Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. *Journal of the American Planning Association*. Summer, 1996.
- iii. Gallagher, Mari. Examining the Impact of Food Deserts on Public Health in Chicago. Mari Gallagher Research & Consulting Group.
- iv. Majora, Carter. "Greening the ghetto" TED lecture.
- v. Oyer, Nicholas. 2013. A mobility wunderkind: Transportation lessons from Germany. *Planning Magazine*

❖ **Due: Peer review of Project Assignment 1**

- Week 10 – Community-scale alternatives to conventional development
 - ❖ Themes: Energy alternatives, renewables, micro-energy, eco-development
 - ❖ Readings
 - i. United States Department of Energy. Federal Energy Management Program. Introduction to Renewable Energy Technologies.
 - ii. Sussman, Edna. 2008. Reshaping municipal and county laws to foster green building, energy efficiency, and renewable energy. *N.Y.U. Environmental Law Journal*. Volume 16: 1-43
 - iii. Cardwell, Diane. 2012. Solar Installers Offer Deals, Gaining Converts. *The New York Times*. 9 May 2012.
 - iv. Bealty, Timothy. 2007. Envisioning solar cities: Urban futures powered by sustainable energy. *Journal of Urban Technology* 14(2): 31-46.
 - v. Dawson, Jonathan. 2006. Ecovillages: New Frontiers for Sustainability. Schumacher Briefings. White River Junction, Vermont: Chelsea Green Publishing. Chapters 1-2.
 - vi. Baker, Linda. 2009. Green at City Scale: Portland explores how to create 'eco-districts'.
 - vii. Lovell, Jeremy. 2011. "UK 'zero emissions' housing development misses target, but satisfies most residents." *E&E*. 3 June 2011.
 - viii. Cardwell, Diane, and Clifford Krauss. 2017, January 15. A Big Test for Big Batteries. *The New York Times*, <https://nyti.ms/2jluAMR>.

Unit IV – Green Buildings and Individual Choices: In this unit we will explore how site level design considerations and individual, day-to-day consumption decisions have an influence on the environment. We will discuss low-impact interior design, individual dietary choices, and transportation choices. **This unit will conclude with final project presentations of your sustainability assessment project and a final exam.**

- Week 11 – Site-scale design and planning for resilience
 - ❖ Themes: Green building, vulnerability
 - ❖ Readings
 - i. Feuer, Alan. 2014. Building for the next big storm. *New York Times* Oct. 25, 2014.

- ii. Freedman, Andrew. 2013. Up to 5 billion face entirely new climate by 2050. *Climate Central*.
 - iii. Hall, Keith (ed.). Sun, Light, and Fresh Air. Green Building Bible Volume 1, 3rd Edition. Green Building Press.
 - iv. Hall, Keith (ed.). Greening the Kitchen. Green Building Bible Volume 1, 3rd Edition. Green Building Press.
 - v. Hall, Keith (ed.). Straw Bale Construction. Green Building Bible Volume 1, 3rd Edition. Green Building Press.
- Week 12 – Greening buildings
 - ❖ Themes: Eco-interiors, low-impact design
 - ❖ Readings
 - i. Lovins, Amory. 2007. Rocky Mountain Institute Visitor’s Guide.
 - ii. Electrical and Computer Engineering (ECE) Green Building Facts.
 - ❖ Self-guided (virtual) tour of the LEED Platinum Electrical and Computer Engineering (ECE) Building on campus.
 - ❖ **Due: Project Assignment 2 – Assessing Local Sustainability**
- Week 13 – Site-scale systems
 - ❖ Themes: Water systems, electronics and appliances
 - ❖ Readings
 - i. Hall, Keith (ed.). 2008. Waste Water Management. The Green Building Bible, Volume 1. 3rd Edition. Green Building Press. pp. 380-386.
 - ii. Anorve, Cesar. (1998) "Box 4.2: San Luis Beltran" in Winbald, Uno (ed.), Ecological Sanitation. pp. 66.
 - iii. Farghalli, Nancy. 2009. "Recycling 'Gray Water' Cheaply, Safely." National Public Radio. 8 June 2009.
 - iv. Smithers, Rebecca. 2011. "Paper towels least green way of drying hands, study finds." The Guardian. 11 November 2011.
 - v. "Why firms go green." Schumpeter, The Economist. 12 November 2011.
 - vi. Kojima, Kazuko. 2011. The Japanese engineer calling for a life without electricity. The Guardian. 4 November 2011.
 - ❖ **Due: Peer review of local sustainability assessment milestone**
 - ❖ Assigned: Project Step 5
- Week 14 – FALL BREAK
- Week 15 – Student presentations
 - ❖ In class: Sustainability assessment project presentations
- Week 16 – Student presentations and final exam
 - ❖ **Due: Public meeting reflection**
 - ❖ Final exam online.

Summary of Sessions

| WEEK | DATES | SESSION DETAILS |
|------|--------------|--|
| 1 | Aug 25/27 | Topics: Course introduction; Understanding “urban” and “sustainability” Activities: Zoom lecture (T) and Zoom discussion (TH) |
| 2 | Sep 1/3 | Topics: Natural systems in crisis; Global environmental issues Activities: Zoom discussion (TH) |
| 3 | Sep 8/10 | Topics: Climate change causes and effects; Energy production and consumption Activities: Zoom discussion (TH) |
| 4 | Sep 15/17 | Topics: Urbanization and suburbanization post WWII Activities: Zoom discussion (TH) |
| 5 | Sep 22/24 | Topics: The regional dilemma; Regional water systems Activities: Zoom discussion (TH) |
| 6 | Sep 29/Oct 1 | Topics: Sprawl, growth management, “smart growth”, regional equity, environmental justice Activities: Zoom discussion (TH) |
| 7 | Oct 6/8 | Topics: Social systems and demographic change Activities: Zoom discussion (TH); Self-guided Boneyard Creek tour |
| 8 | Oct 13/15 | Topics: Neighborhood design and LEED-ND; Community scale sustainability Activities: Zoom discussion (TH) Due: Project Assignment 1 – Exploring Regional Sustainability |
| 9 | Oct 20/22 | Topics: Environmental justice and transportation infrastructure Activities: Zoom discussion (TH) Due: Peer review of Project Assignment 1 |
| 10 | Oct 27/29 | Topics: Energy alternatives, renewables, and micro-energy; Community-scale alternatives Activities: Zoom discussion (TH) |
| 11 | Nov 3/5 | Topics: Introduction to site-scale design Activities: Zoom guest speaker Scott Tess w/City of Urbana (TH) |
| 12 | Nov 10/12 | Topics: Eco-interiors Activities: Self-guided or virtual tour of the LEED certified Electrical & Computer Engineering (ECE) building on campus Due: Project Assignment 2 – Assessing Local Sustainability |
| 13 | Nov 17/19 | Topics: Site-scale water systems; Electronics and appliances Activities: Zoom discussion (TH) Due: Peer review of local sustainability assessment milestone |
| 14 | Nov 24/26 | FALL BREAK |
| 15 | Dec 1/3 | Work session |
| 16 | Dec 8 | Topics: Course wrap-up Due: Public meeting reflection; Presentation; Final Exam |