Advanced Academic Programs
Zanvyl Krieger School of Arts and Sciences
Johns Hopkins University

Syllabus – Fall 2017

420.644.81 Sustainable Cities

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There is no escaping it: ours is an urban world. More people in the world lived in urban settlements than rural areas with estimates of reaching 75% urban by the end of the century. "The city" is the predominant structure of human settlement and the source of human impacts on the natural world. Moreover, urban areas are growing with exponential speed with little or no restrictions. However, "the city" also holds the most promise for shifting the relationships between human-based systems and natural systems so that human impact on the ecosphere might be less detrimental and more sustainable. It is this dual dimension of urbanization and the environment that we will examine in this course. The class examines these issues in light of the Paris Accord on Climate Change and the rising commitment of cities to meet the goals of the agreement. The goal is to better understand how cities contributes to ecological damage as well as how cities hold the solution.

Course Objectives
At the completion of the course, students will be able to

- Explain the major environmental impacts of cities and the effect of globalization on both urban development and city environments
- Explain the role of cities in creating sustainability
- Articulate specific alternatives to traditional urban development that can mitigate environmental impacts
- Understand the role of planning, governance and measurements in the development of sustainable cities
- Describe the relationships between competing environmental interests in sustainable urban development practice

Grading (See Assignments on Blackboard course for more details)

Briefing Note – 20%
Virtual Field Trip – 25%
Threaded Discussion – 25%
Final Paper and Presenation– 30%

Grade Policy
Grades are assigned on a 4-point scale, as follows:
4.0 = A, 3.7 = A-, 3.3 = B+, 3.0 = B, 2.7 = B-, 2.0 = C, 0 = F

No Late Assignments will be accepted.

No Required Texts: All readings will be available via eReserve or web link on the course site.

Course Policies

Class "Attendance:"
The online class format is very demanding. Since there is no classroom to attend every week at an allotted time, the success of the course and of your learning depends on the frequency and quality of student participation through the various communication tools available to us in the virtual classroom. The most important tool we will use is the Threaded Discussion. You are required to logon to the course **at least 3 times each week.** You will also be required to post regularly onto the Threaded Discussion. Each unit will outline the specific number and type of postings required for that unit. In most cases, **it will be at least 3 postings.** Keep in mind that the quantity of postings is just the beginning. You will also be evaluated on the substance of your posting. A simple "I agree," or "That is a good point," is not sufficient. You should think about making a meaningful contribution to the ongoing dialogue. As you get ready to post or respond, ask yourself, "What value am I adding to this discussion?" Keep in mind, also, that a long post does not necessarily indicate more substance.

Contacting the Instructor:
It is best to try to answer questions online in the group format. In most cases, many students have similar questions, so the group format is helpful to everyone. **I will be logging onto the course 3 times a week, so there may be a lag time between when you post and when I respon**d. In cases when you need to contact me privately, feel free to send an email via Blackboard.

Netiquette:

1. Check the discussion frequently and post responses appropriately.
2. In each of your posts, focus on one subject. Use additional posts if necessary. Use the subject titles appropriately.
3. Since your classmates can't see your face, think carefully about how your words might be read. Sometimes subtle humor in a post reads in unintended ways. Be careful and thoughtful before you post.
4. If you are posting an exceptionally long response, please warn the participants at the beginning of the post. It is better if you can think through your ideas and keep them cogent and to the point.

There is 24/7 technical help available to all AAP students.

Tentative Schedule

Introductions: Aug 28 – Aug 30

Unit 1: August 31 – Sept 6
The Paris Agreement

- Falkner, Robert, The Paris Agreement and the new logic of international climate politics, *International Affairs* 92: 5 (2016) 1107–1125

- David Victor, "Why Paris Worked: A Different Approach to Climate Diplomacy." *Yale Environment 360*, December 15, 2015, http://e360.yale.edu/features/why_paris_worked_a_different_approach_to_climate_diplomacy

- Hone, David, Chapter 5 "The Paris Agreement," in *Putting the Genie Back: Solving the Climate and Energy Dilemma*," Bingley: Emerald Publishing Limited, 2017.

Unit 2: Sept 7 – Sept 13
Cities and Climate Change

- Sheridan Bartlett , and David Satterthwaite, Chapter 1 "Urbanization, Development and SDG," in *Cities on a Finite Planet: Towards transformative responses to climate change*, Taylor and Francis, 2016

- Bloomberg, Michael, "City Century: Why Municipalities Are the Key to Fighting Climate Change," *Foreign Affairs*, New York 94.5 (Sep/Oct 2015): 116-124,1.

- Rauland**,** Vanessa, Newman, Peter, Chapter 3, "Why Cities?" in *Decarbonizing Cities: Mainstreaming Low Carbon Urban Development*, Springer, 2015

Unit 3: Sept 14 – Sept 20
Measuring Success: Indicators and GHG Inventories

- Ex Sum, Ch 2, 3 and 11 in *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories*, http://www.ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities

- Catalina Turcu, "Re-thinking sustainability indicators: local perspectives of urban sustainability," *Journal of Environmental Planning and Management* Vol. 56, No. 5, June 2013, 695–719

- Matthias Ruth, Sanchari Ghosh, Sahar Mirzaee, Nancy S. Lee, "Co-benefits and Co-costs of Climate Action Plans for Low-Carbon Cities," in Shobhakar Dhakal and Matthias Ruth, eds. *Creating Low Carbon Cities*, Springer, 2017.

Unit 4: Sept 21 – Sept 27
Greening and Urban Ecology

- Puay Yok Tan, "Perspectives on Greening of Cities Through an Ecological Lens" in Puay Yok Tan and Chi Yung Jim, eds, *Greening Cities: Forms and Functions* Springer, 2017.

- Choose one of the following from Puay Yok Tan and Chi Yung Jim, eds, *Greening Cities: Forms and Functions* Springer, 2017.

    - Urban Greening and Microclimate Modification
    - Urban Greening and Its Role in Fostering Human Well-Being
    - Urban Community Gardens as Multimodal Social Spaces
    - Urban Green and Biodiversity
    - Urban Nature and Urban Ecosystem Services

- Jennifer A. Salmond, et.al, "Health and climate related ecosystem services provided by street trees in the urban environment," *Environmental Health* 2016, 15(Suppl 1):36

Unit 5: Sept 28 – October 4
Transportation and Land Use

- John L. Renne, "The Pent-Up Demand for Transit-Oriented Development and Its Role in Reducing Oil Dependence," in *Transport Beyond Oil* (Washington, DC: Island Press, 2013)

- Thaddeus R. Miller and Amy Lubitow , "The Politics of Sustainability: Contested urban bikeway development in Portland, Oregon," Ch 14 in Zavestoski, Stephen, ed. *Incomplete Streets: Processes, Practices and Possibilities*, Taylor and Francis, 2014

- Roseland, Mark. Chapter 8, "Transportation Planning and Traffic," in *Toward Sustainable Communities : Solutions for Citizens and Their Governments*, New Society Publishers, 2012.

- Roseland, Mark. Chapter 9 "Land Use, Urban Form and Community," *Toward Sustainable Communities : Solutions for Citizens and Their Governments*, New Society Publishers, 2012.

Briefing Note Due: Oct 1

Unit 6: Oct 5 – Oct 11
Green Buildings Cities and Energy

- Nilesh Y. Jadhav, "Green and Smart Building Trends" in *Green and Smart Buildings: Advanced Technology Options*, Springer 2016

- Lucia Athens, "Green Building Incentives and Codes," *in Building an Emerald City: A Guide to Creating Green Building Policies and Programs* (Island Press, 2009): pp. 101-119.

- USGBC, *Green Buildings and Climate Resilience: Understanding Impacts and Preparing for changing Conditions*, 2011, https://www.usgbc.org/resources/green-building-and-climate-resilience-understanding-impacts-and-preparing-changing-conditi

Unit 7: Oct 12 – Oct 18

Energy Policies in Cities

- IRENA (2016), Renewable Energy in Cities, International Renewable Energy Agency (IRENA), Abu Dhabi, http://www.irena.org/DocumentDownloads/Publications/IRENA_Renewable_Energy_in_Cities_2016.pdf

- Jennifer Lenhart and Joan Fitzgerald, "Eco-Districts as a Transition Pathway to Low-Carbon Cities**,"** in Shobhakar Dhakal and Matthias Ruth, eds. *Creating Low Carbon Cities*, Springer, 2017.

- Rocher, Laurence, "Climate-Energy Policies, Heat Provision, and Urban Planning: A Renewal of Interest in District Heating in France: Insights from National and Local Levels," *Journal of Urban Technology*. Jul2014, Vol. 21 Issue 3, p3-19. 17p.

Unit 8: Oct 19 – Oct 25
Urban Adaptation

- Magali Dreyfus, "Adaptation to Climate Change in Cities," in Walter Leal, Filho, ed. *Handbook of Climate Change Adaptation*, Springer 2015

- Elisabeth Hamin and Nicole Gurran, "Climbing the Adaptation Planning Ladder: Barriers and Enablers in Municipal Planning," in Walter Leal, Filho, ed. *Handbook of Climate Change Adaptation*, Springer 2015

Unit 9: Oct 26 – Nov 1
Urban Adaptation – Case Studies

- Cynthia Rosenzweig and William Solecki, 2010, "New York City Adaptation in Context," *Annals of New York Academy of Sciences*, 1196: 1-28

- Huang-Lachmann, and Lovett, Jon C.' "How cities prepare for climate change: Comparing Hamburg and Rotterdam," Cities 2016 54: 36-44

- Lennart J. Lundqvist, "Planning for Climate Change Adaptation in a Multi-level Context: The Gothenburg Metropolitan Area, *European Planning Studies*, 2016 Vol. 24, No. 1, 1–20,

Unit 10: Nov 2 – Nov 8
Virtual Field Trips

- **VFT Due – November 5**

Unit 11: Nov 9 – Nov 15
Urban Agriculture

- Sara S. Metcalf and Michael J. Widener, 2011. "Growing Buffalo's capacity for local food: A systems framework for sustainable agriculture," *Applied Geography* 31: 1242-1251.

- Hubert De Bon, Laurent Parrot and Paul Moustier , "Sustainable urban agriculture in developing countries. A review" Agronomy for. Sustainable Development 30 (2010) 21–32

- Wendy Mendes, Kevin Balmer, Terra Kaethler, and Amanda Rhoads, "Using Land Inventories to Plan for Urban Agriculture Experiences From Portland and Vancouver," *Journal of the American Planning Association*, Autumn 2008, Vol. 74, No. 4

- Peter Ladner, 2011. *The Urban Food Revolution*, New Society Publishers, Choose one of Chapters 4 – 17

Thanksgiving Day Break: Nov 16 - 26

Unit 12: Oct 27 – Dec 4
Urban Water Systems

- Åse Johannessen and Christine Wamsler, "What does resilience mean for urban water services?" *Ecology and Society* 22(1):1

- Shobhakar Dhaka, "Optimizing Water-Energy-Carbon Nexus in Cities for Low Carbon Development," in Shobhakar Dhakal and Matthias Ruth, eds. *Creating Low Carbon Cities*, Springer, 2017.

Unit 12: Dec 5 - 12
Final Papers

- **2 - page summary Due Dec 8**
- **Final Paper Due December 12**

Assignments

- **Please see Assignments on the Blackboard site for more details, grading criteria and examples.**
- **No extra credit given in this course.**
- **No late assignments accepted.**

Briefing Note – Due October 1

In this assignment, students will prepare a Briefing Note (~1250 words) that presents to decision-makers (e.g. city council members, mayors, etc) the case for pledging to uphold the Paris Accord.

Choose a particular city or town that has not made the pledge. Write the paper as a memo to the decision-makers. You must use at least 2 sources from the class. You can use sources from other cities to help your argument.

Virtual Field Trip Report - Due November 5

The goal of this assignment is for you to explore a location in urban areas that either contribute to sustainability of the city or diminish from the city's sustainability. The Assignment on the Blackboard site has a list of criteria for site and guiding questions for you to use for your exploration of your chosen sites. You will present your guided tour for the rest of us as a voice over ppt, or an audio recording.

Research Paper – 2 Page summary due December 8; Full paper due December 12

The goal of the paper is to construct a critical assessment of a particular urban sustainability idea, case, theme, issue or concept of interest to you. Examples include urban agriculture, renewable energy in cities, sustainable cities and health, climate change, and urban metabolism. The paper must be a critical argument, not just a summary of the topic. The thesis/argument must be clearly stated from the beginning, along with how the argument relates to the course themes. The body of the paper should lay out the evidence to support your thesis. You should also provide recommendations or alternative viewpoints and state the extent to which your paper contributes to a better understanding of urban sustainability. The paper will be marked according to clarity, succinctness, organization and accuracy. You are expected to cite the data sources you used, including contact names if applicable. You are expected to cite as references **at least 10 scholarly research sources (i.e. journal articles and books- you can include references from the course readings),** in addition to non-scholarly sources (e.g. government or private sector reports, interviews, newspapers, magazines, the internet, etc.). You should aim for 4000 – 4500 words (plus tables, figures, references, etc.).