

Planning for Climate Change  
Fall 2018 – RP 585  
Tuesday/Thursday 1:00 – 2:15  
New Africa House Room 26  
3 credits

Professor Elisabeth Hamin Infield  
342 Design Building  
Office hours Wednesday 10 - 12 or by appointment  
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This seminar explores resiliency planning for communities, particularly in the relationship among climate change, built form and infrastructure. What design and regulatory changes are needed to help communities become more resilient to extreme events and climate change while reducing greenhouse gases? How should communities choose between traditional built infrastructure, green infrastructure, and non-structural approaches? What are the equity implications of these choices – who wins, who loses, who pays, who benefits? The class is a graduate-level research seminar in which you will read peer-reviewed articles, discuss them, draw your own conclusions, and do your own research. This course topics are interdisciplinary, emerging and very complex. This suggests that the right pedagogy for the class is collaborative learning, where students are key contributors to knowledge generation. Students from all disciplines are welcome and will be asked to bring their disciplinary knowledge to the discussions.

**Key seminar learning goals include:**

- Refresh and build basic knowledge of climate change science and policy;
- Develop awareness of both adaptation (adjusting to future climate) and mitigation (reducing greenhouse gasses) in an urban context;
- Apply an ethical lens to issues, attending to the distribution of costs and benefits of action and inaction and the integration of equity and vulnerability in analysis;
- Gain familiarity with planning issues in a developing country context;
- Develop research skills and critical thinking through analysis of a community plan and preparation of a research paper.

**Seminar Expectations:**

1. Participate in class discussions. To assure you do the readings prior to class, this year we will use *Perusall*, a software program that allows you to annotate articles and share those comments with others in your discussion group and with me. You can miss two readings with no penalty. Generally, a 2/3 is a fine score.

- **Perusall course code: HAMIN-YBSD5**
2. Students will select one reading for which they will lead class discussion. This includes preparing a 5 - 10 minute or so summary and identifying a few discussion points.
  3. Read and carefully evaluate one city's mitigation and adaptation plan(s), and share your findings with the class. Please turn in your slides with lecture notes. For mitigation and then for adaptation, please prepare up to 8 slides (with presentation notes or script) on:
    - Who did the plan, when and why (to the extent you can figure it out)?
    - What are the climate challenges they seek to address?
    - At least 2 planned actions discussed in some detail
    - Did equity get discussed? What about costs and financing?
    - Whatever else you think was interesting
  4. Prepare a 15 page research paper on a topic related to resiliency and climate change. Topics should suit your interests and be approved by me. See general notes below on evaluation criteria. The best papers will be selected for class presentation.
  5. At the end of the semester, write an integrative paper that focuses on your 5 – 8 favorite readings or assigned lectures, and what they say about the future of cities and/or urban regions. Particularly for those students coming from outside of planning, feel free to reflect on how the course topics inform your views of your discipline. Up to 6 pages in length.
  6. Zube lectures: Please attend at least these two Zube lectures, held in Design Building 170 if at all possible. We can identify another lecture or two that will be relevant from other departments as well.
    - i. 10/24 Wednesday 4:30, Frederick Steiner
    - ii. 9/27 Thursday 4:30, Tim Beatley

**Absence policy:** Attendance in class is essential. Students are allowed two class absences with no need for any excuse; religious observances are an appropriate use of these absences. Any absences beyond that require a doctor's note or other university approved documentation. Students are still responsible for annotating readings from days they have missed.

**Grading:**

Class participation and class discussion leadership	10%
Reading annotations through Perusall	20%
City Plan mitigation presentation (slides only, no paper)	10%
City Plan adaptation presentation (slides only, no paper)	10%
Research report proposal and outline	5%
Research report (15 pages, with citations)	25%
Integrative Paper (5-6 pgs with citations)	20%

General evaluation criteria and expectations. Please submit products on moodle in word or ppt format, **not pdf**. Posters should be printed (plan ahead!) as well as submitted on line, and can be pdf or ppt.

To grade your contribution, I will look for the following characteristics:

1. Did the project meet the guidelines discussed in class (on time, right length, right format, appropriate citations, appropriate topic)?
2. Was the quality of the final product high – grammatical and factually correct, well written without excess words and with clear, concise organization, graphically attractive? Strong graphics can balance out less strength in writing.
3. If I provided draft comments, were these addressed in the final product?
4. Did you bring in appropriate outside resources where relevant? Resources may include on-line ‘white papers’ from highly recognized sources, other studies, and scholarly articles, and must be appropriately cited.
5. Did you demonstrate original analysis and thought and integrate a range of sources or ideas from class?

**Lab-n-Lunch invitation:** Students interested in climate change or in working with me on research meet twice a month for lunch and discussion. You are welcome to join us (free lunch!) – please talk to me after class.

#### **ACCOMMODATION POLICY STATEMENT**

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), Learning Disabilities Support Services (LDSS), or Psychological Disabilities Services (PDS), you may be eligible for reasonable academic accommodations to help you succeed in this course. Please notify Disability Services who will then notify me of appropriate accommodations. This should occur within the first two weeks of the semester (except for emergent situations) so that we may make timely arrangements. I am also happy to talk with you in person about accommodations once notified by DS that accommodations will be required.

#### **POLICY ON MAINTAINING A RESPECTFUL LEARNING ENVIRONMENT**

We are all responsible for maintaining a classroom environment that is conducive to learning and discussion. In order to assure that we all have the opportunity to gain from time spent in class, I propose these standards for creating a respectful learning environment.

- It is essential that all students, regardless of political affiliation, feel comfortable contributing in class. Respectful dissent is appropriate; ad hominem attacks on political parties or leaders is not.
- We are on time for class: no late arrivals and no packing up early.
- We avoid disruptions during class such as private conversations, reading newspapers, speaking on cell phones or texting, using a laptop for something other than current classroom work, and, of course, sleeping. If you get sleepy, feel free to stand up.

- We avoid negative language that is considered racist, sexist, or homophobic or in other ways may exclude members of our campus and classroom community.

**STATEMENT OF ACADEMIC HONESTY AND INTEGRITY**

It is expected that all graduate students will abide by the Graduate Student Honor Code and the Academic Honesty Policy (available at the Graduate Dean’s Office, the Academic Honesty Office (Ombud’s Office) or online at [http://www.umass.edu/gradschool/handbook/univ\\_policies\\_regulations\\_a.htm](http://www.umass.edu/gradschool/handbook/univ_policies_regulations_a.htm)). Sanctions for acts of dishonesty range from receiving a grade of F on the paper/exam/assignment or in the course, loss of funding, being placed on probation or suspension for a period of time, or being dismissed from the University. All students have the right of appeal through the academic honesty board.

**GRADING**

Students are allowed two class absence with no need for any excuse. Any absences beyond that require a doctor’s note or university approved documentation. All formal assignments are grade on a 10 point numerical scale. The letter grade equivalents to the numerical scores are:

A $\geq$ 9.6	9.2 $\leq$ A - < 9.6
8.8 $\leq$ B + < 9.2	8.4 $\leq$ B < 8.8
8.0 $\leq$ B - < 8.4	7.6 $\leq$ C+ < 8.0
7.2 $\leq$ C < 7.6	6.8 $\leq$ C- < 7.2
D < 6.8	

Week # and Dates	General Topic	Readings: All readings are from: Hamin, Abunnasr and Ryan (2019 preprint) <i>Planning for Climate Change: A Reader in Green Infrastructure and Sustainable Design for Resilient Cities</i> . New York and London: Routledge.  ANNOTATE ASSIGNMENTS IN PERUSALL SIGN IN CODE: <b>HAMIN-YBSD5</b>	Assignment Due	Student Leader
Week 1 Sept 4 and 6	Class overview and introduction to climate change	<b>Book Introduction;</b> pg 1- 5. Orr, D. W. (2007). "Optimism and Hope in a Hotter Time." pg. 11-15  ---. What is annotating and why do it? (not in text) <a href="https://research.ewu.edu/c.php?g=82207">https://research.ewu.edu/c.php?g=82207</a>  scoring-examples.pdf rubric.doc		
Week 2 Sept 11 and 13	Foundational Knowledge  Intro City Plans assignment. Select your city plans to read	Section I Introduction pg. 9 -10. IPPC AR5 selection, pg. 16 – 33.  Wilby, Robert. (2007). "A Review of Climate Change Impacts on the Built Environment." Pg 34 – 41.	Sept 12 5 pm: Post city name and plan title(s) and year(s)	
Week 3 Sept 18	SAGE and Infrastructure	Section II Introduction, pg. 51-54.		

and 20	Intro Mitigation	<p>Hamin et al (2018). "Pathways to Coastal Resilience: The Adaptive Gradients Framework" <i>Sustainability</i> 2018, 10, 2629; doi:10.3390/su10082629 (not in text)</p> <p>Pacala, S., and R. Socolow. (2004). "Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies." Pg. 55 - 61</p> <p>Hoornweg, Dan, Lorraine Sugar, &amp; Claudia Lorena Trejos Gomez. (2011). "Cities and Greenhouse Gas Emissions: Moving Forward." Pg. 62-71.</p>		
Week 4 Sept 25 and 27	Mitigation Con't	<p>Lee, Sungwon &amp; Bumsoo Lee. (2014). "The influence of urban form on GHG emissions in the U.S. household sector." Pg. 72-82.</p> <p>Boswell, Michael R., Adrienne I. Greve &amp; Tammy L. Seale. (2010) "An Assessment of the Link Between Greenhouse Gas Emissions Inventories and Climate Action Plans." Pg. 83-90.</p> <p>Dodman, David (2011), "Forces driving urban greenhouse gas emissions." Pg. 91-97.</p>	City Plans slides – Sept 24th 5 pm	
Week 5 Oct 2 and 4		<p>City Plans – Mitigation; selected student presentations</p> <p>October 4: also go to Mass Grad Planning Symposium, write up your perspectives. If attending is not feasible, see me for alternatives.</p>	Extra office hours -- come in to discuss your paper idea	

Week 6 Oct 11 only		City Plans – Mitigation; selected student presentations	One paragraph research paper proposal – Oct 10th at 5 pm	
Week 7 Oct 16 and 18	Adaptation, Risk, Resilience	Section III Introduction. Pg. 105-110. IPCC, 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Pg. 111-128.  Adger, W. Neil ,Terry P. Hughes, Carl Folke, Stephen R. Carpenter, Johan Rockström. (2005) “Social-Ecological Resilience to Coastal Disasters.” Pg. 150-158  Cutter, Susan L. and Christina Finch (2008) “Temporal and spatial changes in social vulnerability to natural hazards” Pg. 129-137	Detailed outline of research paper, including sources – Oct 15th at 5 pm	
Week 8 Oct 23 and 25	Co-benefits, Equity and participation continued	Harlan, Sharon L. and Darren M. Ruddel. (2011) “Climate change and health in cities: impacts of heat and air pollution and potential co-benefits from mitigation and adaptation.” Pg. 98-103.  Frosch, Rachel Morello, Manuel Pastor, Jim Sadd, and Seth Shonkoff. <i>The Climate Gap: Inequalities in How Climate Change Hurts Americans &amp; How to Close the Gap.</i> Pg. 138-149.  Salick, J. and Ross, N. (2009) “Traditional peoples and climate change.” Pg. 159 - 165.	Oct 25 – group assignment	
Week 9 Oct 30, Nov 1	Urban Form: Heat and Water	Stone, Brian et al. Avoiding Heat-Related Mortality Through Climate Adaptation Strategies in Three Cities” Pg. 225-232.	City Plan slides due Nov 1, 5 pm	

		<p>Kleerkoper, Laura et al. "How to Make a City Climate Proof: Addressing the Urban Heat Island Effect" Pg. 250-262.</p> <p>Popkin, Gabriel (2013). "Breaking the Waves" Pg. 299-305.</p> <p>Kirshen, Paul et al (2015). "Interdependencies of Urban Climate Change Impacts and Adaptation Strategies: A Case Study of Metropolitan Boston, USA" Pg. 306-314.</p>		
Week 10 Nov 6 and 8		City Plans – Adaptation and Disaster Reduction/Response	Nov 5 <sup>th</sup> 5 pm -- Research papers due	
Week 11 Nov 13		City Plans – Adaptation and Disaster Reduction/Response		
Week 12 Nov 27 and 29	Global Cities Responding	<p>Section VII Introduction. Pg. 329-331.</p> <p>Lyth, Anna &amp; Justus Kithiia. (2011). "Urban wildscapes and green spaces in Mombasa and their potential contribution to climate change adaptation and mitigation." Pg. 352-360.</p> <p>Mycoo, Michelle. (2014). "Sustainable tourism, climate change and sea level rise adaptation policies in Barbados." Pg. 315-325.</p> <p>Shi, Linda, Eric Chu &amp; Jessica Debates (now Debates Garrison) (2015). "Explaining Progress in Climate</p>		

		Adaptation Planning Across 156 U.S. Municipalities." Pg. 340-351.		
Week 13 Dec 4 &6		Selected Research Presentations		
Week 14 Dec 11	Class wrap-up and evals.		Integration paper & optional revisions to research paper due by Dec 17.	