

Department of City and Regional Planning
University of North Carolina at Chapel Hill

PLAN 755: Planning for Natural Hazards and Climate Change Adaptation

Fall 2020

Monday, 8:30am-11am

Instructor: Dr. Miyuki Hino (she/her/hers), mhino@unc.edu

Please use email as the default way of reaching me during the semester and put PLAN755 in the subject line. I will do my best to respond to you within 48 hours.

Office hours: sign up here <https://calendly.com/miyukih>

Zoom meetings: <https://unc.zoom.us/j/2402747203>

Course description and learning objectives

This course is a graduate-level introduction to the human dimensions of natural hazards and climate change adaptation. What can we do to reduce the losses from floods, fires, and other extreme weather events? How can we minimize the impacts of climate change? The focus of this course is on understanding how governance – institutions, policies, politics, from individual to international scales – influences the risks that communities face.

By the end of the course, you will be able to analyze how the current governance system affects natural hazard risk in the US, evaluate existing hazard mitigation and climate change adaptation plans, and design strategies to prioritize equity in disaster preparedness and recovery.

Prerequisites and preparation

There are no official prerequisites to this course, and undergraduates are permitted to enroll with instructor permission. For some of you, this may be one of many courses you've taken on natural hazards and climate change; for others, it may be the first. Some of you will bring rich professional experience to the course. Please be considerate of all of your classmates and take the opportunity to learn from one another!

The companion course to this class is PLAN 756: Survey of Natural Hazards and Disasters. For those of you who have already taken 756, there will be some initial overlap between these two classes to establish a common vocabulary among the class. If you have not taken 756, it is less focused on governance and public policy than this course, and more focused on hazard-specific risks and responses, including linkages between climate science, engineering, law, and other fields.

Course structure

We are in the midst of a global pandemic, so this will not be a typical semester. You do not need to be on campus at any time to enroll in this course. For students who are close to campus and *want* to engage in-person, there will likely be opportunities to do so, depending on conditions. The course is designed to be virtually identical for fully remote and partially remote students, so please do not feel the slightest bit of pressure to engage in person.

There are two parallel threads running through the semester: (1) weekly lectures and reading responses, and (2) two long-term projects. The two long-term projects are a group case study and a semester-long individual policy memo.

The weekly reading responses and recorded lectures will all be done on your own time. Each week, you'll first complete the readings, then watch the recorded lecture (all of which will be available through Sakai). Finally, you will post a brief response to the reading prompt and post a question you have about the content on Sakai – the question can be about either the readings or the lecture. This work must be done by the end of the day Thursday on the week that it is assigned. For example, for the readings/lectures assigned in Week 2, your posts must be up by the end of the day on Thursday, August 20. Earlier posts are preferred so that there is time for the class (including me) to engage with your comments and questions. While it is not *required*, I highly encourage you to respond to, echo, and generally engage with your classmates' responses and questions!

Class sessions each week will be a mix of full-class and small-group meetings. Full class, synchronous Zoom meetings will take place from 8:30am-11am on August 10th, September 21st, November 9th, and November 16th. In the other weeks, there will be small group meetings conducted, either in person or remotely (based on your own preferences and general community safety concerns), during the normal class time slot (Mondays, 8:30am-11am).

The small group meetings will be largely focused on the two long-term projects. These are designed to be opportunities for us to check in on progress, discuss any questions that have arisen, and generally make sure everyone is on the right track. This means that you will *also* be working on the long-term projects each week in preparation for the weekly meetings.

Your participation will be assessed based on the online forums, full-group meetings, and small-group meetings, and quality is more important than quantity. I recognize that some may be more comfortable speaking up in small groups vs. large groups, or in written form rather than verbally, so you are free to choose to participate more through one channel than another. However, I strongly encourage you to participate through all channels.

Please keep in mind that these plans are subject to change with very short notice.

Grading

- Completion of reading question and response (18%, 2% per week)
- Participation in online discussions and small-group meetings (17%)
- Policy memo (45%)
 - o Peer feedback (5%)
 - o Memo (including background work) (30%)
 - o Presentation (10%)
- Case study (20%)
 - o Presentation + background work (15%)
 - o Reflection on cross-case learning (5%)

Community standards

This fall semester, while we are in the midst of a global pandemic, all enrolled students are required to wear a mask covering your mouth and nose at all times for any in-person meetings. This requirement is to protect our educational community — your classmates and me — as we

learn together. If you choose not to wear a mask, or wear it improperly, I will ask you to leave immediately, and I will submit a report to the [Office of Student Conduct](#). At that point you will be disenrolled from this course for the protection of our educational community. Students who have an authorized accommodation from Accessibility Resources and Service have an exception. For additional information, see [Carolina Together](#).

If we have plans to meet in person and you would like to switch to a virtual meeting for any reason, please let me know as early as possible, and we can adjust our small group meetings accordingly.

Course policies

Online interactions

Much of our interaction this fall will be online. Without auditory and visual clues, it's easy to misunderstand or misinterpret others. Please communicate with others *as you would face-to-face*. Be respectful and conduct yourselves professionally. Your forum posts and other online contributions are a core part of your participation in this course.

On Zoom calls, the default expectation is that you will have your video on throughout our meetings. Virtual backgrounds, pets, and wandering family members are welcome! If you are having trouble with internet speeds, I recommend that you connect to audio via telephone, so that even if your video is lagging, your audio connection will be unaffected.

Please include your preferred pronouns in your Zoom names.

Here is the full connection information for our Zoom meetings:

<https://unc.zoom.us/j/2402747203>

Meeting ID: 240 274 7203

One tap mobile

+19294362866,,2402747203# US (New York)

+13017158592,,2402747203# US (Germantown)

Dial by your location

+1 929 436 2866 US (New York)

+1 301 715 8592 US (Germantown)

+1 312 626 6799 US (Chicago)

+1 669 900 6833 US (San Jose)

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

877 853 5257 US Toll-free

855 880 1246 US Toll-free

Meeting ID: 240 274 7203

Find your local number: <https://unc.zoom.us/u/atYL0pLqS>

Academic honesty

The University of North Carolina at Chapel Hill has had a student-led honor system for over 100 years. Academic integrity is at the heart of Carolina and we all are responsible for upholding the ideals of honor and integrity. The student-led Honor System is responsible for adjudicating any suspected violations of the Honor Code and all suspected instances of academic dishonesty will

be reported to the Honor System. Information, including your responsibilities as a student is outlined in the Instrument of Student Judicial Governance. Your full participation and observance of the Honor Code is expected.

You are not permitted to upload any content from this course to the web in any form, including but not limited to Chegg, Course Hero, Coursera, Google Drive, etc. If you post my course content, you may be violating my intellectual property rights. If you post your own work from this course, you are allowing sites to profit from your intellectual property. In utilizing web sources to upload or download course content, you risk violating the University's Honor Code.

I encourage you to work with your classmates, and you are welcome to exchange drafts, provide feedback, and generally assist one another. If you do so, please acknowledge the contributions of your classmates in your assignment.

Creating a safe and inclusive learning environment

I value the perspectives of individuals from all backgrounds reflecting the diversity of our students. I broadly define diversity to include race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, and physical and learning ability. I strive to make this classroom an inclusive space for all students. Please let me know if there is anything I can do to improve!

At all times, but especially during a pandemic, your mental wellbeing is the first and foremost priority. Please take care of yourselves and each other. You can find resources at CAPS' website: <https://caps.unc.edu/> or visit their facilities on the third floor of the Campus Health Services building for a walk-in evaluation to learn more.

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Please contact the Director of Title IX Compliance (Adrienne Allison – Adrienne.allison@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gpsc@unc.edu; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu.

Disability / accessibility

The University of North Carolina – Chapel Hill provides accommodations for any student with documented disabilities. If you require accommodations, please contact the Department of Accessibility Resources at <https://ars.unc.edu>. Please contact me early in the semester so we can make any necessary arrangements.

Late or incomplete work

Weekly assignments (reading responses and questions) must be completed in the week that they are assigned and will not receive any credit if they are late.

For other written assignments, there will be a 10% penalty for each day it is late. However, extensions can be arranged if you reach out to me well in advance of the deadline, or if you have an emergency arise. Please connect with me as quickly as possible if an extension is needed.

Attendance

If for some reason you cannot make a small group session or a full class meeting, please let me know as early as possible. Any unexplained absences will affect your participation grade. Explained absences (within reason) will not affect your participation grade.

Course schedule

This schedule and associated readings are subject to change, so please make sure you refer to the most recent syllabus.

Week	In class	Readings
1	Course introduction. Why should we care about natural hazards and climate change?	Before the Week 2 meeting, please read the starter resources for your case study and be prepared to discuss with the group
2	Case study check-ins	Key concepts in climate and hazard risk management <ul style="list-style-type: none">• Cannon, T., 1994. Vulnerability Analysis and the Explanation of “Natural” Disasters.• Intergovernmental Panel on Climate Change (IPCC) Special Report on Extreme Events, Chapter 1, Sections 1.1.2 – 1.1.2.2. (Reference for definitions of terms).
3	Case study check-ins	Federal government role in disaster preparedness and recovery <ul style="list-style-type: none">• American Planning Association, 2014. Planning for Post-Disaster Recovery: Next Generation. PAS Report 576. Chapter 4: The Federal Framework for Disaster Recovery• Howell, J. and Elliott, J.R., 2018. Damages done: the longitudinal impacts of natural hazards on wealth inequality in the United States. Social Problems.• Government Accountability Office, 2019. Disaster Resilience Framework: principles for analyzing federal efforts to facilitate and promote resilience to natural disasters. Recommended: <ul style="list-style-type: none">• The Atlantic, 2019. Floodlines podcast.• Munoz, C.E. and Tate, E., 2016. Unequal recovery? Federal resource distribution after a Midwest flood disaster. International Journal of Environmental Research and Public Health.
4	Case study check-ins	State, tribal, and local government roles in disaster preparedness and recovery <ul style="list-style-type: none">• Nalau et al., 2015. Is adaptation a local responsibility? Environmental Science and Policy.

		<ul style="list-style-type: none"> • Shi, L., Chu, E., and Debats, J., 2015. Explaining progress in climate adaptation planning across 156 US municipalities. Journal of the American Planning Association. • Wilson, B., 2020. Urban heat management and the legacy of redlining. Journal of the American Planning Association. • Lake et al., 2017. Returning fire to the land: celebrating traditional knowledge and fire. Journal of Forestry.
5	NO CLASS – LABOR DAY	
6	Case study check-ins	<p>Community and non-government organizations roles in disaster preparedness and recovery</p> <ul style="list-style-type: none"> • Hendricks et al., 2018. The development of a participatory assessment technique for infrastructure: neighborhood-level monitoring towards sustainable infrastructure systems. Sustainable Cities and Societies. • Van Aalst et al., 2008. Community level adaptation to climate change: the potential role of participatory community risk assessment. Global Environmental Change. • McKenna, M., 2016. If Waffle House is closed, it's time to panic. FiveThirtyEight.
7	Case study presentations	
8	Policy memo check-ins	<p>Hazard mitigation and climate change adaptation plans</p> <ul style="list-style-type: none"> • Woodruff, S.C. and Stults, M., 2016. Numerous strategies but limited implementation guidance in US local adaptation plans • Anguelovski et al., 2016. Equity impacts of urban land use planning for climate adaptation: critical perspectives from the Global North and South. Journal of Planning Education and Research. • Hardy, R.D. et al., 2017. Racial coastal formation: the environmental injustice of colorblind adaptation planning for sea-level rise. Geoforum. <p>Recommended:</p> <ul style="list-style-type: none"> • ICLEI, 2014. Integrating hazard mitigation and climate change adaptation planning: case studies and lessons learned.

		<ul style="list-style-type: none"> Lyles et al., 2012. Evaluation of local hazard mitigation plan quality. Center for Sustainable Community Design and Coastal Hazards Center, University of North Carolina at Chapel Hill.
9	Policy memo check-ins	<p>Risk assessment</p> <ul style="list-style-type: none"> FEMA, 2013. Local mitigation planning handbook. Chapter 5: Conduct a Risk Assessment. Climate Impacts Group, 2007. Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments. Chapters 8 and 9. Adapting to Rising Tides, 2012. Addressing social vulnerability and equity in climate change adaptation planning. <p>Recommended:</p> <ul style="list-style-type: none"> Urban Land Institute, 2015. A Guide for Assessing Climate Change Risk. CRiSTAL User's Manual (Community-based Risk Screening Tool – Adaptation and Livelihoods).
10	Policy memo check-ins	<p>Option evaluation and decision-making under uncertainty</p> <ul style="list-style-type: none"> FEMA, 2013. Local mitigation planning handbook. Chapter 6: Develop a Mitigation Strategy. Climate Impacts Group, 2007. Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments. Chapter 10. Hallegatte, S., 2008. Strategies to adapt to an uncertain climate change. Global Environmental Change.
11	Policy memo check-ins	<p>Monitoring and evaluation</p> <ul style="list-style-type: none"> Barnett et al., 2014. A local coastal adaptation pathway. Nature Climate Change. Ford et al., 2013. How to track adaptation to climate change: a typology of approaches for national-level application. Ecology and Society. National Institute of Building Sciences, 2019. Natural hazard mitigation saves, 2019 report. Overview only.
12	Policy memo check-ins	<p>International governance</p> <ul style="list-style-type: none"> Khan et al., 2019. Twenty-five years of adaptation finance through a climate justice lens. Climatic Change.

		<ul style="list-style-type: none"> • Vulturius, G., and Davis, M., 2016. Defining loss and damage: the science and politics around one of the most contested issues within the UNFCCC. Stockholm Environment Institute. • Benzie, M., and Persson, A., 2019. Governing borderless climate risks: moving beyond the territorial framing of adaptation. International Environmental Agreements.
13	Policy memo check-ins	<p>Current events <i>No required readings or responses – work on policy memo + presentation.</i></p> <p>Optional:</p> <ul style="list-style-type: none"> • House of Representatives Climate Crisis report, Executive Summary. • North Carolina Climate Risks and Resilience Report, Chapter 1
14	Final presentations (Part I)	
15	Final presentations (Part II)	