

DEPARTMENT OF CITY + METROPOLITAN PLANNING

CMP 4960 & 6960: PLANNING FOR DISASTERS AND ENVIRONMENTAL CHANGE SPRING 2018

MEETING TIME: Tuesdays & Thursdays, 2:00-3:20 PM

MEETING PLACE: Business Classroom Building (BU C), Room 206C

INSTRUCTOR: Dr. Divya Chandrasekhar

EMAIL ADDRESS: D.Chandrasekhar@utah.edu

TELEPHONE: 801-585-7102

OFFICE HOURS: By appointment

OFFICE LOCATION: Room 220B, Architecture Building

COURSE DESCRIPTION:

Disaster events are on the rise around the world and climate change is only contributing to this trend. Urban planners and public managers are increasingly called upon to help prepare communities against environmental change events, to help mitigate their impacts and to recover from them. But doing so requires us to understand how disasters affect local communities in the first place and how they can, and have been managed in the past.

This course will provide students of planning and related professions with an introduction to the underlying concepts, analytical techniques and practices in disaster management. Students will then apply this knowledge in conducting recovery assessments and planning information analysis for local communities affected by the 2017 Hurricane Maria in Puerto Rico. Interested students will also have the opportunity for (self-funded) travel to San Juan, Puerto Rico to visit affected communities in partnership with the Puerto Rican Agenda of Chicago.

STUDENT LEARNING OUTCOMES: Students who consistently and fully participate in course activities will learn about:

- i) The historic evolution of disaster science and management as a field
- ii) Key concepts in disaster management
- iii) Human dimensions of disasters and climate change events
- iv) State policies and assistance programs for disaster mitigation and recovery
- v) Case studies in mitigation and recovery planning from around the world
- vi) Analytical methods, including various pre- and post-event assessments, and will
- vii) Gain hands-on experience with local recovery planning in disaster-affected communities.

The course is designed as a lecture-discussion format combined with a workshop component and talks by leading disaster academics and experts around the region and country.

COURSE TEXTS AND MATERIALS

Course texts consist of journal papers and extracts from books and professional reports all of which will be made available through the Canvas (under Course Documents), or Marriott Library's ebook collection, or through other online sources as indicated in the course schedule. Students must read all material assigned for that day in the course schedule prior to attending class.

Sources of the reading material are listed below. Some of the classic textbooks are highlighted as well. You may choose to purchase these from any bookstore of your choice, bearing in mind the correct editions.

- Berke, P., et al. (2015). Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change: A Resilience Scorecard. *Journal of the American Planning Association*, 81(4), 287-302.
- **Burby, R. J. (1998). *Cooperating with Nature: Confronting Natural Hazards with Land-Use Planning for Sustainable Communities*. Washington, D.C.: John Henry Press.**
- Cardona, O.D., et al (2012). "Determinants of risk: exposure and vulnerability". In *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation—A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC)*. Cambridge, UK, and New York, NY, USA: Cambridge University Press, pp. 65-108.
- **Comerio, M. (1998). *Disaster hits home: new policy for urban housing recovery*. Berkeley: University of California Press.**
- Cutter, S.L., Boruff, B.J., & Shirley, W. L. (2003). Social Vulnerability to Environmental Hazards. *Social Science Quarterly*, 84(1), pp. 242-261.
- Cutter, S.L., Burton, C.G., & Emrich, C.T. (2010). Disaster Resilience Indicators for Benchmarking Baseline Conditions. *Journal of Homeland Security and Emergency Management*, 7(1), Article 51.
- **Johnson, L. & Olshansky, R.O. (2016). *After Great Disasters: How Six Countries Managed Community Recovery*. Cambridge, MA: Lincoln Institute of Land Policy.**
<https://www.lincolninst.edu/publications/policy-focus-reports/after-great-disasters>
- McCarthy, F.X. (2011). *Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding*. CRS Report RL33053.
- **Mileti, D.S. (1999). *Disasters by Design: A Reassessment of Natural Hazards in the United States*. Joseph Henry Press: Washington D.C.**
- Morrow, B. H. (1999). Identifying and mapping community vulnerability. *Disasters*, 23(1), pp. 1-12.
- National Research Council, Committee on Disaster Research in the Social Science. (2006). *Facing hazards and disasters: Understanding Human Dimensions*. Washington, D.C.: The National Academies Press. Available here: <http://www.nap.edu/catalog/11671/facing-hazards-and-disasters-understanding-human-dimensions>.
- O'Brien, G. et al. (2006). Climate change and disaster management, *Disasters*, 30(1), pp. 64-80.

- Pearce, L. (2003). Disaster Management and Community Planning, and Public Participation: How to Achieve Sustainable Hazard Mitigation. *Natural Hazard Review*, 28(2-3), pp. 211-228.
- **Pelling, M. (2003). *Natural disasters and development in a globalizing world*. London: Routledge.**
- Quarantelli, E. L. (1985). "What Is Disaster? The need for clarification in definition and conceptualization in research". In Barbara Sowder (Ed.), *Disasters and Mental Health Selected Contemporary Perspectives*. Washington, D.C.: U.S. Government Printing Office.
- Serrao-Neumann, S., et al. (2015). Maximizing synergies between disaster risk reduction and climate change adaptation: Potential enablers for improved planning outcomes. *Environmental Science & Policy*, 50, 46-61.
- Schwab, Jim, et.al. (2015). *Planning for post-disaster recovery: Next Generation*. Chicago, IL: American Planning Association. https://www.fema.gov/media-library-data/1425503479190-22edb246b925ba41104b7d38eddc207f/APA_PAS_576.pdf
- "Terminology on DRR" from the website of the United Nations Office for Disaster Risk Reduction or UNISDR.
- Thomalla F. et al. (2006). Reducing hazard vulnerability: towards a common approach between disaster risk reduction and climate adaptation, *Disasters*, 30(1), pp. 39-48.
- Krieser, M., Mullins, M. & Nagel, J. C. (2018). *Federal Disaster Assistance Response and Recovery Programs: Brief Summaries*. CRS Report RL31734. <https://fas.org/sgp/crs/homesecc/RL31734.pdf>
- **Wisner, B., Blaikie, P., Cannon, T. & Davis, I. (2003). *At risk: natural hazards, people's vulnerability and disasters*. New York, NY: Routledge.**

COURSE EVALUATION

Students will be graded based on their full and successful participation in all of the following activities:

i) Weekly Blog Entry on Hurricane Maria (preferably) or another recent disaster

Each week you must read one news article about a current disaster (preferably, Hurricane Maria) or climate change event to analyze and discuss in a blog entry. The article may be from a local, national or international newspaper or from a planning-related magazine. The article must be directly related to a disaster or environmental change event. It must be current (i.e. from the same week as the assignment) and it must be a news article, not an editorial or any other type of article (e.g. blog). Your information must be reliable, so choose your news source carefully.

For each article, prepare a 300 to 400 words blog post using the following questions to frame your thoughts:

- What is the disaster event being reported on, and what is its impact? What challenges being reported about damage or recovery assessment?
- What are the main relief or recovery issues being reported and who is reporting it (govt. or media or someone else)?
- What relief, recovery or mitigation actions are being undertaken for this disaster event?

- Who is involved in these actions and at what scale (local, regional, national, international)?
- Is there any conflict between actors and what about?
- What equity issues are being reported? What is being done about it?
- Does the disaster event illustrate any of the concepts you are reading about in course materials? In your opinion, what factors would affect the response and recovery process?

Pick an article for which you can answer most, if not all, of the above questions. Include a link and full citation for the article in your response. Click on the link to make sure it works. You may also comment on your classmates' blog entries if you wish.

The entry should be in your "voice", so don't over-quote the material! Practice paraphrasing. Here's how: <https://owl.english.purdue.edu/owl/resource/619/2/>). If you are quoting any material, follow the American Psychological Association (APA) Style of Reference and Citation:

<http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx>

Your entry will be graded based on timeliness, thoroughness, clarity and quality of writing. There are 15 weeks of blog entries. A blog post is NOT required for Spring Break week. To start your blog, go to the Discussion tab on Canvas and click on the red "+Discussion" button. This thread will serve as your individual blog. Title your thread **[YOUR NAME] Blog** and check the "Allow Threaded Replies" box in the settings. Your entry should be uploaded by 11:59 PM (midnight) of every Sunday. You use your blog entry to add to class discussions.

ii) Mitigation Plan Review

You must each obtain and evaluate one mitigation plan for a community within the United States for its (the plan's) content and arrangement. You should choose a plan that is well-documented and created at the city or community level. Write a report describing the components of the plan (what does it contain?), its legal or policy basis (if mentioned), the types of analyses presented, and the programmatic action recommended. Also discuss which features of the plan would you consider as 'best practices' for mitigation planning and why.

The Mitigation Plan Review Report should be 4-5 pages long, single-spaced, using 11 point Times New Roman font. Do not write the report in first-person narrative. You must add a full bibliographic reference to the plan at the end of your report (add URL if available) and attach a copy of your mitigation plan document to your submission. If you have only a hard copy of the plan, then you must submit a photocopy of the plans to the instructor in class by the day of the assignment or you may attach a scanned copy onto Canvas.

Your report will be graded based on timeliness, thoroughness, level of critical thinking, and your quality of writing. The Mitigation Plan Review Report will be due by 11:59 PM (midnight) on the date

indicated in the schedule. Upload this on Canvas under Assignments. Late assignments will not be accepted.

iii) Recovery Assessment and Planning for post-Hurricane Maria Puerto Rico

This semester you and your classmates will help disaster-affected local communities in Puerto Rico to conduct recovery assessment and analyses and/or plan-making. Hurricane Maria devastated large parts of Puerto Rico in 2017 and many communities are struggling to create recovery and mitigation plans. One of their major needs is data on recovery as well as potential mitigation action. In partnership with the Puerto Rican Agenda of Chicago (a prominent diaspora organization in the U.S.) we will be assisting local communities in gathering this information and to suggest potential mitigation actions for future disasters. We will devote the second half of this class to this project entirely. More details on the project scope will be provided as the semester proceeds.

This project also provides interested students with the **OPTIONAL** opportunity to travel to Puerto Rico in March 2018 (over Spring Break) to visit disaster-affected communities and to experience the recovery process first hand. This is a self-funded and self-organized visit meaning, you will pay for and book your own travel. The instructor will provide you with airline and hotel suggestions and will set a meeting date, time and location in San Juan, Puerto Rico. From there, we will follow a pre-set agenda for visiting communities and meeting with local organizations involved in recovery. We will be assisted in this by the Puerto Rican Agenda of Chicago as well as by Dr. Ivis Garcia of CMP who is based in San Juan this Spring. **Travel is NOT REQUIRED for successful completion of this course.**

The anticipated travel cost per student for 5-6 days of travel, including air travel, local travel and accommodation (but not food) is approximately \$1,300. Food cost is expected to be low. It is recommended that students share hotel rooms to keep accommodation cost low. All traveling students will also be required to [register with the University's Global U program](#) and obtain travel insurance (around \$10-\$20). It is also recommended that you visit the U.S. State Department's [student travel abroad](#) website and the Center for Disease Control's [pre-travel immunization website](#) to make sure you are up-to-date on health and safety matters.

While this is a group exercise, each student will be assigned a specific task based on their skills and interest. Students can also team-up into groups of 2 or 3 based on similar interests and skills. The entire team will present its findings and recommendations at the end of the semester. You will also be required to submit a final report in hard copy and electronically (via Canvas) on the same day.

Your work will be graded on the thoroughness of your work, its analytical content, the quality of your recommendations and that of your writing and presentation. You will submit your presentation and report (as a team) on Canvas by 5 PM of April 25th (Final's day). **Please note, the Final's will be held between 1-3 PM on April 25th. The classroom is TBA.**

- iv) Reading all assigned texts and participation in all discussions equally and meaningfully. It is the responsibility of the audience to respond to questions being posed. You can expect to be called on by the instructor to respond from time to time and so make sure you are familiar with the material.

Be thoughtful in your response—there are no right or wrong answers, but there are well-informed arguments. An opinion is not a ‘well-informed’ argument unless it is supported by reliable and robust evidence and has been auto-critiqued. In other words, try to challenge your own thought before challenging those of others.

Attendance for all guest lectures is mandatory. Attendance is counted in your participation grade.

- v) Extra Credit: This semester the College is hosting a series of events under the title of Year of Resilience. These include lectures, workshops and documentary screenings on the topic of disaster recovery and resilience. Students will earn 1-point extra credit for attending each event for a total of 7 points. Posters of these events are posted around the Architecture Building and is also available on Canvas under Discussion.

COURSE GRADING

You will be scored for various activity components which will be tallied at the end for a score out of 100, and then converted to a letter grade.

Component	Non-doctoral students
Weekly Blog Entry (individual score)	2 pts X 15 wks. = 30 pts
Mitigation Plan Review (individual score)	10 pts = 10 pts
Recovery Framework Report and presentation (group + individual score)	Report (Team) points = 35 Presentation (Individual) pts. = 15
Class participation and quality of discussion	10 pts
TOTAL	100 pts

The final scores will be converted to a letter-grade using the following structure:

A ≥ 93.3%; A- ≥ 90.0%; B+ ≥ 86.6%; B ≥ 83.3%; B- ≥ 80.0%; C+ ≥ 76.6%; C ≥ 73.3%; C- ≥ 70.0%; D+ ≥ 66.6%; D ≥ 63.3%; D- ≥ 60.0%.

UNIVERSITY & INSTRUCTOR POLICIES

- i) The Americans with Disabilities Act: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

ii) Addressing Sexual Misconduct: Title IX of the federal Education Amendments of 1972 states, in part: “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance.” Under this law, violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 332 South 1400 East, Room 112 (Bldg. 73), 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 328 Student Services Building (SSB), 801-581-7779. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

iii) Academic misconduct: While teamwork, open discussion and dialogue encouraged because they provide critical learning and peer experience, each participant must submit their own original work in order to be graded. Academic misconduct includes cheating, plagiarizing, research misconduct, misrepresenting one’s work, and inappropriately collaborating. Definitions of these and other terms can be found in the Student Code at <http://www.regulations.utah.edu/academics/6-400.html>.

This course has a ZERO TOLERANCE policy for academic misconduct. All incidents of misconduct will be reported to your respective departments and will constitute full and sufficient grounds for immediate disciplinary action, including a Fail Grade in the assignment and/or the entire course. CA+P students who engage in academic misconduct more than once are subject to the policy of the College of Architecture + Planning that directs college and department administrators to seek the dismissal of offending students from their academic program.

iv) Canvas: The course will employ Canvas software to share information about newsworthy events and articles, provide supplemental course readings, facilitate discussions outside of class, and give instant access to grades. You are responsible for checking the Canvas site regularly and to make sure you are up-to-date on latest announcements.

v) Changes/Modifications to syllabus: This syllabus and its course schedule is meant to serve as an outline and guide for our course and are both subject to modification with reasonable notice to you. Any changes will be announced in class and posted on Canvas under Announcements.

vi) Class Attendance and Student Travel

You are expected to attend all sessions of this course, including all guest lectures. You may be excused from class, without penalty, for participating in officially sanctioned University activities, or government obligations, or religious obligations. You must provide advance notice of such absences and some documentation as proof. If you miss class for medical reasons, you must provide a

doctor's note as soon as possible. You should also try and inform the instructor as soon as possible via email or phone message.

Students with excused absences will be allowed to submit missing assignments, again without penalty, within a reasonable time frame. All unexcused absences will result in a penalty in class participation scores. Students should not schedule travel on days they are presenting or moderating.

- vii) Electronic Devices: Using tablets and laptops can aid the taking of notes and reference to materials without having to carry printed texts to class. Cell phone conversations, texting, and other use of electronic devices in a manner that does not relate to our classroom conversations is not acceptable. Please be courteous to me and your classmates by not misusing laptops, smart phones, and other devices in class.
- viii) ESL Resources: If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.
- ix) Important registration dates:
- | | |
|---|--------------------------------|
| Last day to add, drop (delete), elect CR/NC, or audit classes | Tuesday, March 5 th |
| Last day to withdraw from classes | Friday, March 22 nd |
| Last day to reverse CR/NC option | Friday, April 19 th |
- x) Late Work: Students are responsible for submitting their assignments on time, electronically as indicated. For blog entries you will lose 25% points for each day past due date. This means you will get zero points if the entry is submitted on the fourth day after deadline. Late submissions will not be accepted for the Mitigation Plan Review or for the Final Project.
- xi) Preferred Names & Pronouns: Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your UIDcard, please visit the LGBT Resource Center Room 409 in the Olpin Union Building, or email bpeacock@sa.utah.edu to schedule a time to drop by. The LGBT Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.
- xii) Wellness: Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive. For helpful

resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776. There are also helpful links on the Canvas website, on the Student Wellness Links page.

COURSE SCHEDULE

PART 1: Foundations and Concepts in Disaster Management

Week 1: Introduction

Jan. 8th: Syllabus

Jan. 10th: Get organized. No class.

Week 2: Key terminology and concepts in disaster science

Jan. 15th: Lecture

Jan. 17th: Discussion

Read:

- Chapter 1 from *At risk: natural hazards, people's vulnerability and disasters*. [Canvas]
- "Terminology on DRR". <https://www.unisdr.org/we/inform/terminology>
- "Paradigm of Risk" from *Natural disasters and development in a globalizing world*. [Canvas]
- Chapter 6 from *Facing hazards and disasters: Understanding Human Dimensions*.
<http://www.nap.edu/catalog/11671/facing-hazards-and-disasters-understanding-human-dimensions>

Week 3: Human and social dimensions of disasters

Jan. 22nd: Lecture

Jan. 24th: Discussion

Read:

- Quarantelli, E. L. (1985). "What Is Disaster? The need for clarification in definition and conceptualization in research". Download from here:
<http://udspace.udel.edu/handle/19716/1119>
- Chapter 3 & Appendix B from *Disasters by Design: A Reassessment of Natural Hazards in the United States*. (Marriott Library Ebook).
- Chapter 2 from *Facing hazards and disasters: Understanding Human Dimensions*.
<http://www.nap.edu/catalog/11671/facing-hazards-and-disasters-understanding-human-dimensions>

Week 4: The disaster management cycle and links to planning

Jan. 29th: Lecture.

Jan 31st: Guest Lecture, TBA.

Email Instructor: Your Mitigation Plan case study selection.

Read:

- Chapter 2 & 3 from *Planning for post-disaster recovery: Next generation*.
https://www.fema.gov/media-library-data/1425503479190-22edb246b925ba41104b7d38eddc207f/APA_PAS_576.pdf
- Chapters 3 from *Facing hazards and disasters: Understanding Human Dimensions*.
<http://www.nap.edu/catalog/11671/facing-hazards-and-disasters-understanding-human-dimensions>

Week 5: U.S. mitigation and recovery policy

Feb. 5th: Lecture.

Feb. 7th: Guest Lecture by Timothy Gelston, FEMA Region VIII, Community Planning and Capacity Building (CPCB) Coordinator. Lecture will be held in ARCH 238.

Read:

- Chapter 4 from *Planning for post-disaster recovery: Next generation*.
https://www.fema.gov/media-library-data/1425503479190-22edb246b925ba41104b7d38eddc207f/APA_PAS_576.pdf
- Chapter 5 from *Disaster hits home: new policy for urban housing recovery*. (Marriott Library Ebook)
- McCarthy, F.X. (2011). *Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding*. CRS Report RL33053.
<https://fas.org/sgp/crs/homesecc/RL33053.pdf>
- Krieser, M., Mullins, M. & Nagel, J. C. (2018). *Federal Disaster Assistance Response and Recovery Programs: Brief Summaries*. CRS Report RL31734.
<https://fas.org/sgp/crs/homesecc/RL31734.pdf>

Recommended reading:

- Brown, J.T. & Lindsay, B.R. (2018). *Congressional Primer on Major Disasters and Emergencies*. CRS Report R41981. <https://fas.org/sgp/crs/homesecc/R41981.pdf>
- Boyd, E. (2011). *Community Development Block Grant Funds in Disaster Relief and Recovery*. CRS Report RL33330. <https://www.fas.org/sgp/crs/misc/RL33330.pdf>

Week 6: Mitigation and recovery planning (U.S. and Abroad)

Feb. 12th: Disaster planning the U.S.

Feb. 14th: Disaster Planning in the International Context.

Read:

- Chapter 4 & 5 from *Planning for post-disaster recovery: Next generation*.
https://www.fema.gov/media-library-data/1425503479190-22edb246b925ba41104b7d38eddc207f/APA_PAS_576.pdf
- AS MUCH AS POSSIBLE: Johnson & Olshansky (2016) After Great Disasters (How Six Countries Managed Community Recovery). FREE DOWNLOAD:
<https://www.lincolnst.edu/publications/policy-focus-reports/after-great-disasters>

Week 7: Mitigation Planning Process, community participation, and issues of equity

Feb. 19th: Lecture.

Feb. 21st: Guest Lecture, by Andrew Rumbach, Assistant Professor, CU Denver.

Read:

- Christoplos, I. (2003). "Actors in risk". In M. Pelling (Ed.), *Natural disasters and development in a globalizing world*. [Canvas]
- Pearce, L. (2003). Disaster Management and Community Planning, and Public Participation: How to Achieve Sustainable Hazard Mitigation. [Canvas]
- Fordham, M. (2003). "Gender, disaster and development: The necessity for integration". In M. Pelling (Ed.), *Natural disasters and development in a globalizing world*. [Canvas]

Week 8-A, Feb. 26th: Integrating disaster risk reduction and climate change action

Read:

- Thomalla F. et al. (2006). Reducing hazard vulnerability: towards a common approach between disaster risk reduction and climate adaptation, *Disasters*, 30(1), pp. 39-48. [Canvas]
- O'Brien, G. et al. (2006). Climate change and disaster management, *Disasters*, 30(1), pp. 64-80. [Canvas]
- Serrao-Neumann, S., et al. (2015). Maximising synergies between disaster risk reduction and climate change adaptation: Potential enablers for improved planning outcomes. [Canvas]
- Berke, P., et al. (2015). Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change: A Resilience Scorecard. [Canvas]

Week 8-B, Feb. 28th: Analytical Methods (assessments, indicators and analyses)

Read:

- Morrow, B. H. (1999). Identifying and mapping community vulnerability. [Canvas]
- Chapter 5 from *Cooperating with Nature: Confronting Natural Hazards with Land-Use Planning for Sustainable Communities*. (Marriott Library Ebook)

- Cutter, S.L., Boruff, B.J., & Shirley, W. L. (2003). Social Vulnerability to Environmental Hazards. [Canvas]
- SKIM: Cutter, S.L., Burton, C.G., & Emrich, C.T. (2010). Disaster Resilience Indicators for Benchmarking Baseline Conditions. [Canvas]
- SKIM: Chapter 2 & 3 from *At risk: natural hazards, people's vulnerability and disasters*. [Canvas]

Due: Mitigation Plan Review on Canvas by 11:59 PM (midnight) on Feb. 28th.

PART II: ASSISTING IN PUERTO RICO RECOVERY ASSESSMENT AND PLANNING

Week 9, Introduction to Hurricane Maria Project, Finalize Travel Details

March 5th: Intro to project

March 7th: Create workplan as a group, assign responsibilities

Week 10, (March 12th & 14th): Holiday- Spring Break OR Travel to Puerto Rico

Week 11 (March 19th) to Week 16 (April 23rd): Work on final project

Due: Draft Recovery Framework on April 16th in class

Due: Presentation trial run on April 23rd in class

Week 16th (April 25th): Final Presentation and Report (upload to Canvas and bring hard copy to class)