

Communities and Climate Change
BSC 2930 Special Topics
Class Periods: MWF Period 6 (12:50-1:40 pm)
Location: CHE 0237
Academic Term: fall 2019

Instructor

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Course Description and Objectives

Communities are the collection of citizens, neighbors, governing bodies, and institutions where most people live their daily lives. The community is where the impacts of climate and ecosystem disruption are experienced, and it will be the front line of adaptation to these impacts. Forward looking community leaders seek to develop decision-making processes to use local and regional knowledge to respond to the impacts of climate change. Unfortunately our global economic system and political divisions have left many people disconnected from their communities and living in relative isolation among their neighbors. Re-establishing these human connections and developing an alternative economics are prerequisites for mounting effective community responses to climate change.

This course provides an overview of anthropogenic climate change and helps students develop an understanding local and regional resilience and adaptive responses to specific impacts of climate change. Impacts to be reviewed include extreme temperature, extreme precipitation, sea level rise, population migrations, food and water security, public health, disruption of ecosystem services, and economy. Climate change will be analyzed from a holistic perspective that includes anthropogenic disruption of ecosystems and the biosphere. Students will review critical timelines for global efforts at mitigation and options for how communities can adapt and build resilience with respect to specific future scenarios. Those communities that have been dealing with climate variability for decades and have a wealth of knowledge about how to adapt and this course will use these communities for case studies. Case studies of adaptive responses by communities will provide the basis of individual student projects. Students will choose from a variety of local and regional organizations to explore how these groups are responding to climate change.

Objectives of the course will be achieved if by its conclusion students can

- explain and interpret the causes and consequences of anthropogenic climate change in terms that include the dynamic interaction of the climate and the biosphere.
- describe the reality and uncertainties of how and when particular impacts of climate change will affect individual and collective wellbeing.
- provide explicit examples of community resilience and adaptive responses and evaluate their relative effectiveness.

- describe and evaluate alternative economics and social structures that are suited for downscaling our use of natural resources and mitigating impacts climate change on communities.

Texts

There are no required texts for this course. Scholarship will be developed through short lectures, discussion, outside readings, studies of local and regional community organizations, and case studies from the literature. Suggested resources are listed below.

Expectations

This course has high standards for student creativity and scholarship. Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus, on the course webpage, or announced in class. Independent research by students will be significant portion of assessment. Not having read or followed the instructions will not constitute an excuse for missing an assignment, exam, or other assessment. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information. Check Announcements in Canvas regularly as e-mail notifications from Canvas do not always go through.

Communications

All e-mail correspondence to the course instructor **must originate from your ufl.edu account, have your full name in the body of the e-mail, and contain your course number in the subject line**. As a matter of security, e-mails not meeting these requirements will not be answered.

When you have a question, check the following sources first to see if it is already answered, **before** e-mailing your instructors:

- Course Syllabus
- e-Learning announcements (this is the primary means that your Instructor has to communicate with you in a timely manner)
- e-Learning Discussion General Posts

If you still cannot find the answer to your questions:

- If it is a question that others might find useful to know the answer to as well, post it in the e-Learning Discussion section.
- If it is a question specific to you (e.g., account or grade specific), send an e-mail to Stephen. Barring unusual circumstances, expect a reply within 24 hours (Monday through Friday). E-mails and e-Learning Discussion posts are checked at least once per day, but sometimes not more than that.

Course Website (e-Learning)

Class material including the syllabus, weekly comprehension quizzes, exam results, lecture slides, and other information related to the course will be posted on the course e-Learning website

(<http://lss.at.ufl.edu>). The course is found under “e-Learning in Canvas”. You are responsible for all announcements made in lecture and those posted on the course website. For help with e-Learning, call the UF Computing Help Desk at 352.392.4357, or visit the e-Learning support website: <https://lss.at.ufl.edu/help.shtml>

Course Schedule fall 2019

The lecture schedule will change periodically due to unfolding logistics as the course proceeds. Please check this syllabus on a regular basis.

Module	Day	Date	Topic/Activity	Assigned Readings & Media	Exam / Assignment
1 Climate change	W	21 August	Introduction to the course content and issues	Smithsonian: What Is the Anthropocene & Are We in It? Will Steffen TEDx: The Anthropocene Osborn & Traer TEDx: Generation Anthropocene How to read a scientific article	Required: Fill out your student profile on Canvas and introduce yourself to the class on the Discussion board.
	F	23 August	Climate change in overview; sources of information	Rockström: Hothouse Earth	
	M	26 August	Climate change		
2 Climate change impacts	W	28 August	Climate change impacts	NCA4 2018: Impacts, risks, adaptation UCS: Impacts Alice Bowes-Larkin: Adaptation	Quiz 1 posted
	F	30 August	Discussion and review	James Hansen: Why I must speak out on climate change Dave Roberts: Climate change is simple	Quiz 1 due 25.08.19 at 11:59
	M	Labor Day			
	W	4 September	Climate change in Florida	Florida Climate Institute Summary	
	F	6 September	Discussion and review		

3 Public health	M	9 September	Climate change and public health 1	USGCRP Climate change & human health	Assignment of term project case studies 1 & 2
	W	11 September	Climate change and public health 2		Quiz 2 posted
	F	13 September	Discussion and review		Quiz 2 due 15.09.19 at 11:59
4 Food and water security	M	16 September	Climate change and agriculture. Food and water security.	Aljezzera: Food security Sara Menker TED: Global food crisis UCS: Climate change & agriculture CarbonBrief: Energy-water-food nexus FAO: Food and water systems at risk	
	W	18 September	Exam 1		Exam 1
	F	20 September	Water: Droughts and floods	NYT: More floods & drought UGCRP NCA4: Water	
5 Risks and hazards	M	23 September	Immediate and longer-term risks		
	W	25 September	Perception and probabilities of risks		Quiz 3 posted
	F	27 September	Discussion and review		Quiz 3 due 29.09.19 at 11:59
6 Decision process and risk management	M	30 September	Risk management and adaptive management		
	W	2 October			
	F	4 October	Discussion and review		Evaluation of participation 1
7 Community-based adaptation	M	7 October	Review of concepts of community-based adaptation		Quiz 4 posted
	W	9 October	Examples of CBA		Quiz 4 due 13.10.19 at 11:59
	F	Homecoming			
8 Resilience planning	M	14 October	Defining resilience and planning for resilience		
	W	16 October	Resilience case studies		

	F	18 October	Exam 2		Exam 2
9 Case studies - US	M	21 October	Boston, Phoenix, Salish and Kootenai Tribes, Alaska		
	W	23 October	Florida case studies – Miami, Gainesville, Sarasota		Quiz 5 posted
	F	25 October	Discussion and review		Quiz 5 due 27.10.19 at 11:59
10 Case studies – non-US	M	28 October	Examples from Mexico, India, UK, South Africa		
	W	30 October			
	F	1 November	Discussion and review		
11 Transition communities	M	4 November	Overview of concept and implementation		
	W	6 November			Quiz 6 posted
	F	8 November	Discussion and review		Quiz 6 due 10.11.19 at 11:59
12 Community economics & ethics	M	11 November	Climate change as a moral hazard; appropriate discount rates		
	W	13 November	Alternative economics: Doughnut economics, Steady state economy		
	F	15 November	Exam 3		Exam 3
13 Student reports	M	18 November	Student presentations		
	W	20 November	Student presentations		
	F	22 November	Student presentations		
14 Student reports and catch up day	M	25 November	Catch up		Evaluation of participation 2
	W	Thanksgiving recess			
	F	Thanksgiving recess			
15 Course summary and review	M	2 December	Writing your final report		
	W	4 December	Planning future versions of the course		Final Report due 11:59 9 December

Individual Projects

Each student will explore the climate change or environmental programming of **two community organizations**. An organization can be chosen by the student subject to approval by the instructor and you should seek two organizations that will provide a comparative analysis. The instructor will facilitate introduction of the student to their chosen community organizations. A term project will be developed by the student based on their engagement with the organizations, relevant readings, and comparison to similar organizations. The report will include ***description of organizations and comparative aspects, an annotated bibliography on specific aspects of adaptation, presentation, and final report*** with references. The final report should contain specific recommendations for development of adaptive strategies and building resilience. Each of you will provide a ***peer review of two presentations***. Detailed instructions for each part and grading rubrics will be posted in your Assignments page on Canvas.

Organizations to explore include the list below. You should feel free to propose your own list.

Local organizations

Gainesville Regional Utilities [future power](#) needs
Alachua County Department of [Environmental Protection](#)
Alachua County [Growth Management](#) and Comprehensive Plan
Alachua Conservation Trust <https://www.alachuaconservationtrust.org/>
We are Neutral <https://www.weareneutral.com/#intro>
Current Problems <https://www.currentproblems.org/home-2>
The Florida Springs Institute <https://floridaspringsinstitute.org/>
Rebuilding Together for North Central Florida <https://rebuildingtogetherncf.org/>
Alachua County Commission <https://alachuacounty.us/Depts/BOCC/Pages/BOCC.aspx>
Gainesville City Commission <http://www.cityofgainesville.org/CityCommission.aspx>
Community Weatherization Coalition <http://communityweatherization.org/>

Regional and State Organizations

[Southeast Florida Regional Climate Change Compact](#)
[Sea Level Rise Task Force](#) for Miami/Dade government
Florida Sierra Club <https://www.sierraclub.org/florida>
St. Johns Riverkeeper <http://www.stjohnsriverkeeper.org/>
[Jacksonville Waterways Commission](#)
Regional Resiliency Coalition <http://www.tbrpc.org/resiliency/>

Attendance

Attendance is expected. If you are absent from class when an exam or other activity requiring your participation occurs, you will receive a zero grade for the activity unless the absence is *excused*. An absence is considered *excused* if there is an *acceptable reason* according to UF policy (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>). Examples of acceptable

reasons are medical illness, religious holidays, military obligation, and the twelve-day rule. For religious holidays, students are required to notify the instructor prior to the absence, but documentation of the religious holiday is not required. In all other cases, the following policies apply: It is your responsibility to notify the instructor of an excused absence and to provide documentation of an acceptable reason. Otherwise, the absence will be considered *unexcused*. Whenever possible, notify the instructor by email prior to the absence. When this is not possible (e.g., due to unexpected emergency or illness), the instructor should be notified as soon as possible. You are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material. If you miss class, visit the e-Learning site for any lecture notes and course announcements.

Exams

There will be **three 50-minute exams** during the semester. There is no final exam. Exams will be administered during the normal semester and during normal class meeting times. **Exams will be short essay and emphasize lecture materials and outside readings. Exams will be open book and taken on your personal laptop, written in Word, and emailed to smulkey@ufl.edu.**

Each student must bring her/his Gator ID to class on exam days. No student will be allowed to start an exam after the first student to complete an exam leaves the classroom. No additional time will be given to complete an exam if you arrive late. Exams will be curved and normalized to a scale of 0 to 100 after the distribution of scores has been assembled. Review of your performance on an exam will be available by appointment one week after the date of the exam. Exams will not be available for review after the semester has ended.

No make-up exams will be given without prior permission or documentation of illness. Students that will be missing an exam due to a prearranged university-approved excused absence (sports, etc.) should let the instructor know a minimum of two weeks in advance. These students may be required to take the makeup exam before the scheduled in-class exam.

In case of illness on exam day, a letter from the student's primary care provider is required. This letter must state that the student was unable to complete the exam on the scheduled date (i.e., a letter stating only that the student was seen in a clinic is not sufficient). A personal matter requires a note from the Dean of Students (P202 Peabody Hall). These notes must be received within five business days after the exam. Make up exams may be short-answer or essay format.

Comprehension Quizzes

There will be 6 online quizzes to assess comprehension during the course of the semester. Quizzes will be in objective multiple-choice format. You will be allowed two attempts for each question and the highest score received will be recorded for that quiz. All quizzes must be completed by the stated date and time. Extensions will not be given because of technical or personal issues that occur within 24 hours of date of the quiz. Quizzes will have a set time limit. Students are expected to work independently on the quizzes and to not use notes.

Online and Classroom Group Discussions

Periodically the instructor will pose questions derived from the readings and lectures. Your online participation in these will be noted and recorded as part of your grade as indicated in the grading scale.

Participation

Twice during the semester students will be asked to self-assess their participation in class according to the following scale:

_____ I contribute several times during a class discussion. (25)

_____ I contribute at least once during a class discussion. (20)

_____ I often contribute to class discussion. (10)

_____ I occasionally contribute to class discussion. (5)

_____ I rarely contribute to class discussion. (0)''

Grades

Assessment	Points
In-class Exams (3 @ 50 pts each)	150
Online quizzes (6 @ 20 pts each)	120
Online and in-class Discussions & Participation self-assessment (2 @ 25 pts each)	50
Presentation of Term Project	100
Annotated Bibliography for Term Project	100
Project Report Peer Review (2 @ 25 pts each)	50
Final Project Report	100
Total	670

Grading Policy

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 – 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33

72.0 – 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class. This course will use Turnitin to identify plagiarizing.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Materials for Projects and Discussion

Books

The Community Resilience Reader. 2017. Lerch, Daniel (ed). Post Carbon Institute. Island Press. ISBN-13:978-1-61-91-860-2 (eBook)

The Transition Companion. 2011. Hopkins, Rob. Green Books. ISBN 978-0-85784-040-0 (pdf version)

Climate Justice. 2018. Robinson, Mary. Bloomsbury Publishing. ISBN eBook 978-1-63286-930-2.

Climate Change and Society. Dunlap, R. E., Brulle, R. J. (eds). 2015. Oxford University Press. ISBN 978-0-10-026908-1 (eBook)

Doughnut Economics. Raworth, Kate. 2017. Chelsea Green Publishing. ISBN 9781603586757 (eBook)

Journals*

[Proceedings of the National Academy of Sciences US](#)

[Nature](#)

[Nature Communications](#)

[Science Advances](#)

[Scientific Reports](#)

[Earth's Future](#)

[Nature Climate Change](#)

[Sustainability Science](#)

[Ecology and Society](#)

[Global Environmental Change](#)

[Climatic Change](#)

[Climate Risk Management](#)

*All are freely available if accessed from UFL.EDU

Sources of Literature Reviews and Assessment

US Climate Resilience Toolkit. <https://toolkit.climate.gov/tools>

US Global Change Research Program overview of resources <https://www.globalchange.gov/browse>

US Global Change Research Program report on human health
<https://www.globalchange.gov/browse/reports/impacts-climate-change-human-health-united-states-scientific-assessment>

UN Intergovernmental Panel on Climate Change (IPCC) <https://www.ipcc.ch/> and specifically
<https://www.ipcc.ch/working-group/wg2/>

UN Development Program for Climate Change Adaptation. <https://www.adaptation-undp.org/resources/featured>

ICLEI (International Council for Local Environmental Initiatives) USA. Local Governments for Sustainability. <http://icleiusa.org/>

Selected Literature

Ayers, J., & Forsyth, T. (2009). Community-based adaptation to climate change: Strengthening resilience through development. *Environment*, 51(4), 22–31.

Barr, S., and J. Pollard. 2017. Geographies of Transition: Narrating environmental activism in an age of climate change and 'Peak Oil.' *Environment and Planning A: Economy and Space* 49 (1):47–64.

Carr, E. R. (2008). Between structure and agency: Livelihoods and adaptation in Ghana's Central Region. *Global Environmental Change*, 18(4), 689–699.

Conway, D., & Schipper, L. (2011). Adaptation to climate change in Africa: Challenges and opportunities identified from Ethiopia. *Global Environmental Change*, 21(1), 227–237.

Cutter, S. L. (2003). The vulnerability of science and the science of vulnerability. *Annals of Association of American Geographers*, 93(1), 1–12.

Dodman, D., & Mitlin, D. (2013). Challenges for community-based adaptation: Discovering the potential for transformation. *Journal of International Development*, 25(3), 640–659.

Dumaru, P. (2010). Community-based adaptation: Enhancing community adaptive capacity in Druadrua Island, Fiji. *WIREs: Climate Change*, 1, 751–763.

Dun, O., & Gemenne, F. (2008). Defining environmental migration. *Forced Migration Review*, 31, 10–11.

Faulkner, L., Ayers, J., & Huq, S. (2015). Meaningful measurement for community-based

adaptation. *New Directions for Evaluation*, 147, 89–104.

Forsyth, T. (2013). Community-based adaptation to climate change: A review of past and future challenges. *Wiley Interdisciplinary Reviews: Climate Change*, 4(5), 439–446.

Roberts, D., and S. O'Donoghue. 2013. Urban environmental challenges and climate change action in Durban, South Africa. *Environment and Urbanization* 25 (2):299–319.

Reid, H., and S. Huq. 2014. Mainstreaming community-based adaptation into national and local planning. *Climate and Development* 6 (4):291–292.

Tschakert, P., & Dietrich, K. (2010). Anticipatory learning for climate change adaptation and resilience. *Ecology and Society*, 15(2), 11.

Wiseman, J., L. Williamson, and J. Fritze. 2010. Community engagement and climate change: learning from recent Australian experience. *International Journal of Climate Change Strategies and Management* 2 (2):134–147.

Ziervogel, G., A. Cowen, and J. Ziniades. 2016. Moving from Adaptive to Transformative Capacity: Building Foundations for Inclusive, Thriving, and Regenerative Urban Settlements. *Sustainability* 8 (9):955.