

Communities and Climate Change

BSC 2930

Class Periods:

Location: online

Synchronous Delivery: Monday Period 5 (11:45-12:45); Wednesday Period 5-6 (11:45-1:40)

Academic Term: spring 2021

Instructor

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Phone: 208.596.3234 (cell phone during pandemic - please use respectfully and protect my privacy) Office

Hours: By appointment through Zoom.

Please contact through the Canvas website. Use regular email for personal questions such as grades, special circumstances, and needed accommodations.

Course Description

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. 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 alternative economies 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 of 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 disruptions of economy. Climate change will be presented from a holistic perspective that includes understanding of fossil emissions, anthropogenic disruption of ecosystems and the biosphere, and community-based adaptation. 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 will be used for case studies. Case studies of adaptive responses by local and regional communities in Florida will provide the basis of group student projects. Students will choose from a variety of local and regional organizations to explore how these groups are responding to climate change.

Course Delivery

During the first third of the course, classes will focus on direct content delivery, while later in the semester class will include discussions of the literature and preparation of group projects. Development of the group projects will begin by the third week of classes. Each group will be responsible for researching the climate preparedness of their respective assigned organization, with each group member reporting on a subtopic relevant to the organization. This will include interviews and the development of scholarship based on the literature. Each individual of a group will be responsible for a final report on their findings and groups will give a presentation on these findings during the final two weeks of the semester.

Texts

Recommended: *Climate Action Planning: A Guide to Creating Low-Carbon Resilient Communities.* Boswell, Greve, and Seale. Island Press. 2019. ISBN-1610919637

Optional Text: *Grassroots Stewardship – Sustainability Within Our Reach.* Chapin. Oxford. 2020. ISBN-9780190081195 (use this for references)

Optional Reader: *The Future We Choose: Surviving the Climate Crisis*. Figueres & Rivett-Carnac. Knoff. 2020. ISBN-0525658351 (use this for recommendations from policy leaders)

Scholarship will be also developed through lectures, discussion, outside readings, studies of local and regional community organizations, and case studies from the literature.

A Promise to You

If you keep up with the material, regularly attend synchronous lectures, turn in the assignments on time, and interact with me and your classmates, you will succeed in this course. The amount of material can be daunting. I will help you as you work your way through the modules. Please keep me informed of your individual progress and alert me if you need help.

Assigned Readings, Media, and Webpages

Materials will be assigned as indicated in the course schedule below and posted to the course website by modules in full text or through links. Citations for posted articles are listed at the end of this syllabus. Quizzes will be drawn mainly from lectures and will include some materials from posted readings, media, and webpages. The main points from the assigned readings and media will be included in the lectures or as questions for classroom discussions. Students will be guided to use these materials for group projects and clarification of lectures.

Expectations

This course has high standards for student creativity and scholarship. The schedule of graded assignments intensive and will require students to keep up. The outside readings should be used to develop group projects and to clarify the lectures. The main points from required readings and media will be covered in the lectures, in reflection exercises, or as questions for classroom discussions. 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 a 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. The amount of effort including class time is estimated to be 12 hours per week.

Required Equipment

This class depends on reliable internet connectivity. The download speed should be at least 50mbs. **You must have a personal computer or laptop.** This course cannot be taken from your phone or a tablet because the webpages on canvas are not optimized for mobile devices. **You must have a camera that you can use during synchronous lectures.** I would like to see you during Q&A, and the camera will facilitate me learning who you are. **A camera will also be required for your group project presentation.** Contact me if you require special consideration with respect to equipment or its use in this course.

Use of Your Video During Zoom Lectures

It is critically important that I get to know each of you and that you engage with your classmates. Unless you have a compelling reason to not use your video during class, ***I strongly recommend that you have your video turned on.*** This will contribute to my assessment of your participation and facilitate your engagement with the course. It will also help with the creation of a sense of community, which is something that has been difficult to maintain during the pandemic.

Statement from the Academic Policy Council: Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to

consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

Communications

All e-mail correspondence with me should originate from Canvas, but e-mails of a personal nature may originate from your ufl.edu account. **Put your full name in the body of the e-mail, and your course number in the subject line.**

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

- 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 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 your instructor following the instructions above. 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, links to videos and outside materials, and other information related to the course will be posted on the course e-Learning website (<http://elearning.ufl.edu>). Assignments and quizzes will be available through notifications on Canvas. All quizzes and written assignments will be completed through Canvas and no paper materials will be used throughout the course. 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.

Course Schedule - spring 2021

Please read this: The lecture schedule will change periodically due to unfolding logistics as the course proceeds. Please check this syllabus on a regular basis. Unless stated otherwise all assignments are due on Sunday at 11:59 the week of the module where they appear. You are responsible for scheduling your time to avoid multiple assignments due at the last minutes. Exams will be timed and become available in the morning on Thursday and are due by Friday at midnight of the week when they occur. Your initial post to a Discussion should appear on Thursday in order to give time for your classmates to respond.

Module	Topic/Activity	Readings & Media
Module 1 Climate Change	Lecture: Reality and Responsibility Introduction to course content Lecture: Climate change sources of information Lecture: Climate change processes and causes	-Smithsonian: What Is the Anthropocene? -Climate Adam: Hopes for our climate future -Cook et al. 2016. The scientific consensus - How to read a scientific paper (link in module) NASA Climate Change: How do we know?
Module 2 Climate Change Impacts	Lecture: Climate change causes and processes Lecture: Climate change impacts on living systems and human communities	-NCA4 2018: Impacts, risks, adaptation (summary sections only) -Alice Bowes-Larkin: Adaptation - James Hansen: Why I must speak out on climate change
Module 3 Public Health	Lecture catch up Lecture: Climate change and human health Group project discussion	-USGCRP Climate change & human health 2016 (summary sections only) -UCS summary of Dahl et al. 2019 on heat index - <i>The Lancet Countdown 2020</i> on climate change and public health -Ebi & Semeza 2008 -Haines & Ebi 2019 -Britt Wray TED: How Climate Change Affects Your Mental Health
Module 4 Food and Water Security	Lecture: Climate change and agriculture Lecture: Food and water security	-Aljazeera: Food security -NCA4 2918:Water (key messages only) World Resources Institute: Water security and conflict 2018
Module 5 Risks and Hazards	Lecture: Intermediate and long-term risks Lecture: Communication of climate change risks Group project discussion of community organizations for group projects Discussion of Exam 1 results	-IPCC Impacts, Adaptation, and Vulnerability (top level summary sheet) -World Econ Forum Global Risks 2019 -APA report on Psychology and Global Climate Change 2011 (sections 1 and 4 only) -Ballew et al. 2019 -Marlon et al. 2019
Module 6 Risk Management	Lecture: Risk and adaptive management	-Video: Louisiana sinking lands and communities

	Group projects discussion	<ul style="list-style-type: none"> -The Economist: Towards disaster-risk sensitive investments -Earth Institute: Missing economic risks -Kim et al. 2019 Examples of safe to fail -Video: IISD Adaptation and disaster risk management -Netherlands Room for The River project -Video: Climate foreclosure crisis and financial risk -Short videos from USGCRP
Module 7 Energy Security & Communities	<ul style="list-style-type: none"> Lecture: Fossil fuel energy Lecture: Community renewable energy Video Lecture: A primer on carbon accounting and carbon markets 	<ul style="list-style-type: none"> -Video: Amory Lovins – Reinventing Fire -Hewitt et al. 2019 -U Michigan: US grid energy storage -NREL: Holistic approach to distributed solar energy -TED Exeter: The community energy revolution -Video: Batteries not included – energy storage
Module 8 Community-Based and Ecosystems-Based Adaptation	<ul style="list-style-type: none"> Lecture catch up Lecture: Community- based and ecosystems- based adaptation 	<ul style="list-style-type: none"> -CarbonBrief infographic: Climate adaptation around the world -IUCN & USAID 2020: Gender-based violence -Reid 2015 -Klein et al 2019 -Forsyth 2017 -Integrating gender with CBA
Module 9 Resilience	<ul style="list-style-type: none"> Lecture: Defining resilience and resilience planning Lecture: Community resilience Discussion and review of Exam 2 	<ul style="list-style-type: none"> -Video: Rockström - TED -Folke 2016 (abstract & conclusion only) -Fazey et al. 2017 -Folk 2016 -Goffner et al. 2019
Module 10 Case Studies	<ul style="list-style-type: none"> Lecture: Case studies of community adaptation and sustainability Lecture: Urban sustainability case studies Group project reports and initial findings 	<ul style="list-style-type: none"> -Hunt & Watkiss 2011 (Abstract, Introduction, Conclusions) -Fitzpatrick & Dunn 2019-ICLEI Montréal Commitment -Video: City resilience index -Video: Rockefeller Foundation: 100 resilient cities
Module 11 Wellbeing	<ul style="list-style-type: none"> Lecture: Choosing to live well Lecture: Sustainable foundations of wellbeing 	<ul style="list-style-type: none"> -Maslow 1998. -World Bank 2019 -Stiglitz et al. 2009 -Schrechenberg et al. 2018 -TED: Hayhoe 2018 -Folke et al. 2011 -Louv 2008
Module 12 Climate Change Economics and Wellbeing	<ul style="list-style-type: none"> Lecture: Climate change as a moral hazard; Social discounting Discussion of Exam 3 	<ul style="list-style-type: none"> -Dave Roberts explanation of the discount rate - Video: Kate Raworth TED Donut economics

		-Broome 2008 -Hickel 2018: Nobel prize for climate catastrophe -Beckerman & Hepburn 2007 -Georgeson & Maslin 2019 (Introduction & conclusion) -Video: Hanauer TED The dirty secret of capitalism
Module 13 Student Reports	Lecture catch up Student presentations	Discussion rubric and instructions for presentations and peer reviews

Group Projects

Group members will be assigned by Canvas. Each group of 3 students will explore the climate change planning and programming of one community organization. An organization can be chosen by the group subject to approval by the instructor and you should seek an organization that will provide a comparative analysis with respect to case examples discussed in class. The instructor will facilitate introduction of the groups to their chosen community organization. A list of local, regional, and state organizations is provided below. A term project will be developed by the group based on (1) a written proposal, (2) engagement with the organization, (3) an annotated bibliography with relevant readings and comparison to similar organizations, (4) a group presentation, and (5) a final report submitted independently by each student.

Grading rubrics and explicit instructions will be provided for each phase of the project including detailed instructions for construction of your annotated bibliography. The final report should contain specific recommendations for development of adaptive strategies and building resilience with respect to the community organization assessed by each group. Each student will provide a peer review of two presentations according to rubric provided. Project proposals will consist of two paragraphs describing the organization and their adaptive planning (or absence thereof) and role in community adaptation.

Organizations to explore include the list below. You should feel free to propose your own for approval by the instructor. If you wish to visit the organization, be sure to exercise social distancing and wear a face mask. You should feel free to conduct interviews online.

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, and military obligation. Students who participate in university-sponsored athletic or scholarly activities are permitted to be absent 12 scholastic days per semester without penalty. 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 materials 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 70-minute essay exams during the semester. There is no final exam. Exams will be administered online and made available for 48 hours. Exams will be essay and emphasize lecture materials and specific parts of the outside readings and media. Exams will be open book and taken on your personal laptop and written and submitted through the Canvas website. A possible list of essay questions will be distributed at least one week in advance of the exam date. The exam questions will be chosen from these questions. You are expected to develop in-depth responses to all of the possible questions and thus be fully prepared to answer the ones that appear on the exam.

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 during the exam period, 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 dates (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 will be short-answer or essay format.

Comprehension Quizzes

There will be 5 online quizzes to assess comprehension during the course of the semester. Questions will be drawn from lectures, readings, and media. 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 – typically 60 minutes. Students are expected to work independently on the quizzes and to not use notes. The lowest quiz score will be dropped.

Online and Classroom Discussions

Your instructor will post 5 questions for discussion online.

Directions: You must post a response and give your justified and detailed assessment (8 points) and respond briefly but substantively to one other classmate (2 points). Posts and responses must be completed by the due date.

Each of you will be asked to give a self-assessment of your in-class participation. The instructor will evaluate the self-assessments and assign points.

Participation

Twice during the semester students will be asked to self-assess their online and in class [-participation 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)

Field trips and attendance at talks

Opportunities will arise during the course of the semester for engagement with governmental and nongovernmental bodies in Alachua County. In addition, there are several scheduled talks by experts during January and February. Trips will be scheduled as much in advance as possible and 5 points will be awarded for participation. A typical trip may be to witness and participate in a County Commission of City Commission meeting. The scheduled talks are listed below, but you should feel free to propose attendance at other relevant talks at UF. To ensure credit notify your instructor when you have participated in a field trip.

Public talks during spring 2020

Check the announcements for upcoming video lectures that will qualify for credit.

Grades

Assessment	Points
Online Exams (3 @ 50 pts each)	150
Online quizzes (5 @ 20 pts each)	100
Reflections (4 at 10 pts each)	40
Online Discussions (5 at 10 points each)	50
Self-assessment of in-class participation (2@25 points each)	50
Speaker events (2 at 10 pts each)	20
Group project proposal	20
Peer Review of 2 Project Presentations (15 pts each)	30
Presentation of Term Project	100
Annotated Bibliography for Term Project	100
Final Project Report	100
Total	760

Grading Policy

Percent	Grade	Grade Points
94.0 - 100.0	A	4.00
90.0 – 93.9	A-	3.67
86.0 - 89.9	B+	3.33
82.0 – 85.9	B	3.00
79.0 - 81.9	B-	2.67
76.0 - 78.9	C+	2.33
73.0 – 75.9	C	2.00
70.0 - 72.9	C-	1.67
67.0 - 69.9	D+	1.33
63.0 - 66.9	D	1.00
60.0 - 63.9	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 professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-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://sccr.dso.ufl.edu/process/student-conduct-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>

Resources:

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 or through UF Library as proxy. I strongly recommend that you use [UF VPN](#) to access articles behind a paywall. This is much more direct than using the UF Library proxy.

Sources of Literature Reviews and Assessments

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>

About Stephen Mulkey: “Stephen Mulkey is an environmental scientist dedicated to developing undergraduate and graduate programming to build society’s capacity for environmental mitigation, adaptation, and resilience. Mulkey was the president of Unity College in Unity, Maine from 2011 through 2015. His leadership and forward-looking vision resulted in Unity College being the first college in the U.S. to divest its endowment from the top 200 fossil fuel companies, and the first college in the U.S. to adopt sustainability science as the framework for all academic programming. Mulkey believes that higher education has an ethical duty to prepare generations of graduates for the extreme sustainability and climate change challenges of this century. During and after earning his PhD at the University of Pennsylvania, he spent over twenty years as a tropical forest ecologist affiliated with the Smithsonian. Mulkey has served as tenured faculty at three doctoral granting universities, as science advisor to the state of Florida, and as a program officer at the National Science Foundation.”

You can see more my writings at environmentalcentury.net

Letters of Recommendation: Please do not request a letter of recommendation unless you have cultivated a professional relationship with me. Getting an A in my course is not sufficient. I need to know much more about your professional development before I can write a meaningful letter.