

# *Natural Resources in a Changing Climate – FNR 6668*

## 1. Overview

- 3 Credits
- Spring 2021
- 100% Online
- <http://elearning.ufl.edu>

**Course Prerequisites:** none

### Instructor

Dr. Shirley Baker

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Telephone/Text: 352-213-3808 (cell)

- Please use the Canvas message/Inbox feature for fastest response.
- Office hours: Available by phone or Zoom by appointment.

### Teaching Assistant

Alison Atchia

Email: [alison.atchia@ufl.edu](mailto:alison.atchia@ufl.edu)

Telephone: 320-288-8780

- Please use the Canvas message/Inbox feature for fastest response.
- Office hours: Available by phone or Zoom by appointment.

### Textbook and/or Readings

There is no required text for the course. Online readings will be provided for each learning topic. There will be references to additional readings and resources if you desire further investigation of a topic.

## 2. Learning Outcomes

At the end of this course, each student will be able to:

- Explain the mechanisms and symptoms of climate change.
- Describe the impacts of climate change on species, ecosystems, and habitats.
- Analyze the vulnerability of natural resources to climate change.
- Compare adaptation strategies to reduce vulnerability of natural resources to climate change.
- Evaluate common climate change adaptation strategies for natural resource management and conservation.

## 3. Course Logistics

This course is entirely web-based, and students may access lectures, readings, and supporting materials as they become available each week. Learning modules consisting of lecture, readings, supporting material, and a quiz are provided online for each topic. Learning modules build on previous modules so you should complete the learning modules in the order presented. Each

learning module has required readings beyond the lecture. This information will be covered on quizzes. These files will be made available for you to view on your computer, save, or print.

**Technology Requirements:**

- A computer or mobile device with high-speed internet connection.
- A headset and/or microphone and speakers; a web cam is suggested.
- Latest version of web browser. Canvas supports only the two most recent versions of any given browser. [What browser am I using?](#)

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|---|
| <b>3.1 Assignments &amp; Deliverables</b> |
|---|

**For each of the following assignments, expectations will be described in Canvas, recordings, and grading rubrics.**

**Introduction: 6 points.** Students will introduce themselves by asynchronously sharing an audio/video on *VoiceThread*, as well as watching and commenting on peer introductions.

**Quizzes: 13 @ 5 points each.** Quizzes will be administered through Canvas (see schedule). Quizzes will consist of multiple choice, short answer, and short essays. Questions will be “open notes” but will require critical thinking, integration, and application of interdisciplinary concepts. Quizzes will open and close on the dates noted.

**Journal Club: 10 @ 6 points each.** Journal Club will take place asynchronously via “Discussions” in Canvas. The class will discuss papers from the primary literature or other media, which will be made available on Canvas. Students will be expected to read the materials and to *actively participate in every Journal Club*. Note that, although there are 12 Journal Club weeks, the student will be graded as a leader during two of those weeks and will not receive a general “Journal Club” grade.

**Journal Club Leadership: 2 @ 9 points each.** Twice during the semester, students will be expected to participate in leading Journal Club. A schedule of assigned leadership weeks will be posted in Canvas. Student will serve as different types of leader: *Presenter, Facilitator, and Content Expert*. Further information will be provided.

**Project:** Students will develop a project over the course of the semester. This could be a case study, position paper, review, outreach extension document, curriculum, policy brief, in-service training for extension agents, infographic poster, video, podcast, or adaptation plan, etc. I encourage you to choose a project that will be useful to you (thesis/dissertation, job, etc.) but also pushes you beyond your comfort zone. Each assignment must be submitted by midnight on the due date (see schedule). Further details and grading rubrics are provided in Canvas.

**Project Proposal: 10 points.** Students will present their idea for a project. Instructor will provide feedback and approve of the project.

**Project Progress Statement: 10 points.** Students will submit a draft sample and documentation of project progress. Instructor and peers will provide feedback.

**Peer Feedback on Project Progress: 6 points.** Students will be assigned two peer Project Progress Statements on which to provide feedback. Students will be graded on the usefulness and thoroughness of their feedback.

**Final Project Submission: 30 points.** Students will submit a final project, having incorporated feedback. Peers will view the projects and ask questions in a Discussion set up for each presenter.

**Peer Project Participation: 9 points.** Students will view Final Project Submissions and ask questions of the presenters. Students will be expected to actively participate in interacting with their peers.

### 3.2 Grades & Grading Scale

|                                     |                   |
|-------------------------------------|-------------------|
| <i>VoiceThread</i> Introduction     | 6 points          |
| Quizzes, 13 @ 5 pts each            | 65 points         |
| Journal Club, 10 @ 6 pts each       | 60 points         |
| Journal Club leader, 2 @ 9 pts each | 18 points         |
| Project Proposal                    | 10 points         |
| Project Progress Statement          | 10 points         |
| Peer Feedback on Project Progress   | 6 points          |
| Final Project Submission            | 30 points         |
| Peer Project Participation          | 9 points          |
| <b>TOTAL</b>                        | <b>214 points</b> |

#### Grading scale (%)

A 90-100  
B+ 85-89.99  
B 80-84.99  
C+ 75-79.99  
C 70-74.99  
D+ 65-69.99  
D 60-64.99  
E < 60

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

| <b>4. Course Content - Learning Modules</b>                 |               |   |  |
|---|---------------|---|--|
| <b>Week</b>   | <b>Date</b>   | <b>Topic</b>  | <b>Assignments due</b>   |
| <b>1</b>  | <b>11 Jan</b> | <b>Syllabus</b><br><b>Course content</b><br><b>Project assignment</b><br><b>Climate 101</b> <ul style="list-style-type: none"> <li>- <b>Earth's climate system</b></li> <li>- <b>Carbon dioxide</b></li> </ul>  |  |
| <b>18 January – Martin Luther King Jr. Day – UF Holiday</b> |               |   |  |
| <b>2</b>  | <b>18 Jan</b> | <b>Climate 101</b> <ul style="list-style-type: none"> <li>- <b>Global temperatures</b></li> <li>- <b>Sea level rise</b></li> <li>- <b>Climate models</b></li> <li>- <b>CO<sub>2</sub> emissions models</b></li> </ul>   | <b>VoiceThread Introduction</b><br><br>Quiz Week 1   |
| <b>3</b>  | <b>25 Jan</b> | <b>Impacts of climate change</b> <ul style="list-style-type: none"> <li>- <b>Ocean acidification</b></li> <li>- <b>Extreme events</b></li> <li>- <b>Extreme event projections</b></li> <li>- <b>Social and economic impacts</b></li> </ul>  | Comment/respond on<br><b>VoiceThread Introduction</b><br><br>Quiz Week 2<br><br>Journal Club Week 2<br><br><b>Project Proposal</b> |
| <b>1 Feb – First Day of Black History Month</b>             |               |   |  |
| <b>4</b>  | <b>1 Feb</b>  | <b>Impacts on species</b> <ul style="list-style-type: none"> <li>- <b>Overview</b></li> <li>- <b>Phenology</b> <ul style="list-style-type: none"> <li>- Spring arrival</li> <li>- Growing season length</li> <li>- Underlying mechanisms</li> <li>- Mismatch</li> </ul> </li> </ul>   | Quiz Week 3<br><br>Journal Club Week 3   |
| <b>5</b>  | <b>8 Feb</b>  | <b>Impacts on species</b> <ul style="list-style-type: none"> <li>- <b>Species distribution models</b></li> <li>- <b>Range shifts</b> <ul style="list-style-type: none"> <li>- Marine</li> <li>- Freshwater</li> <li>- Terrestrial</li> </ul> </li> <li>- <b>Extinctions</b></li> </ul>  | Quiz Week 4<br><br>Journal Club Week 4   |
| <b>15 Feb – President's Day</b>                             |               |   |  |
| <b>6</b>  | <b>15 Feb</b> | <b>Impacts on ecosystems</b> <ul style="list-style-type: none"> <li>- <b>Models</b> <ul style="list-style-type: none"> <li>- Dynamic Global Vegetation Models</li> <li>- Gap models</li> </ul> </li> <li>- <b>Experimentation</b> <ul style="list-style-type: none"> <li>- Greenhouse experiments</li> <li>- Field experiments</li> </ul> </li> </ul> | Quiz Week 5<br><br>Journal Club Week 5   |

| <b>Week</b>                                       | <b>Date</b>   | <b>Topic</b>  | <b>Assignments due</b>  |
|---|---------------|---|---|
| <b>7</b>  | <b>22 Feb</b> | <b>Impacts on ecosystems</b> <ul style="list-style-type: none"> <li>- <b>Ecosystem services</b></li> <li>- <b>Tropical forests</b> <ul style="list-style-type: none"> <li>- Barro Colorado Island</li> </ul> </li> <li>- <b>Temperate forests</b> <ul style="list-style-type: none"> <li>- Greater Yellowstone Ecosystem</li> <li>- Whitebark Pine</li> </ul> </li> </ul> | Quiz Week 6<br><br>Journal Club Week 6<br><br><b>Project Progress Statement</b> |
| <b>25 Feb – “Recharge” Day – UF Holiday</b>       |               |   |   |
| <b>1 Mar – First day of Women’s History Month</b> |               |   |   |
| <b>8</b>  | <b>1 Mar</b>  | <b>Impacts on ecosystems</b> <ul style="list-style-type: none"> <li>- <b>Marine ecosystems</b> <ul style="list-style-type: none"> <li>- Review of physical changes</li> <li>- Ecosystem function</li> <li>- Loss of complexity</li> <li>- Novel communities</li> </ul> </li> </ul>  | Quiz Week 7<br><br>Journal Club Week 7<br><br><b>Peer Feedback</b>              |
| <b>9</b>  | <b>8 Mar</b>  | <b>Vulnerability assessment</b> <ul style="list-style-type: none"> <li>- <b>Adaptive governance and management</b></li> <li>- <b>Vulnerability assessment overview</b></li> </ul>   | Quiz Week 8<br><br>Journal Club Week 8  |
| <b>10</b>   | <b>15 Mar</b> | <b>Vulnerability assessment</b> <ul style="list-style-type: none"> <li>- <b>First steps</b></li> <li>- <b>Sensitivity</b></li> <li>- <b>Exposure</b></li> <li>- <b>Adaptive capacity</b></li> </ul>   | Quiz Week 9<br><br>Journal Club Week 9  |
| <b>11</b>   | <b>22 Mar</b> | <b>Vulnerability assessment</b> <ul style="list-style-type: none"> <li>- <b>The CCVI Tool</b> <ul style="list-style-type: none"> <li>- FWC Case Study: Using the CCVI</li> <li>- FWC Case Study: Crocodiles</li> </ul> </li> </ul> <b>Adaptation strategies</b> <ul style="list-style-type: none"> <li>- <b>Overview</b></li> </ul>                                       | Quiz Week 10<br><br>Journal Club Week 10  |
| <b>24 Mar “Recharge” Day – UF Holiday</b>         |               |   |   |
| <b>12</b>   | <b>29 Mar</b> | <b>Adaptation strategies</b> <ul style="list-style-type: none"> <li>- <b>Protected areas</b> <ul style="list-style-type: none"> <li>- Introduction</li> <li>- Planning and management</li> <li>- Challenges</li> </ul> </li> <li>- <b>Connectivity</b> <ul style="list-style-type: none"> <li>- Overview</li> </ul> </li> </ul>   | Quiz Week 11<br><br>Journal Club Week 11  |
| <b>13</b>   | <b>5 Apr</b>  | <b>Adaptation strategies</b> <ul style="list-style-type: none"> <li>- <b>Connectivity</b> <ul style="list-style-type: none"> <li>- Mitigating stressors</li> <li>- Range shifts</li> </ul> </li> <li>- <b>Threatened species</b> <ul style="list-style-type: none"> <li>- Listing the polar bear</li> </ul> </li> <li>- <b>More adaptation tools</b></li> </ul>           | Quiz Week 12<br><br>Journal Club Week 12<br><br><b>Final Project Submission</b> |

| Week | Date   | Topic            | Assignments due                      |
|------|--------|------------------|--------------------------------------|
| 14   | 12 Apr | Student projects | Quiz Week 13<br>Journal Club Week 13 |
| 15   | 19 Apr | Student projects | Peer Project Participation           |

## 5. Readings - Representative Examples

McGuire, J.L. J.J. Lawler, B.H. McRae, T.A. Nuñez, and D.M. Theobald. 2016. Achieving climate connectivity in a fragmented landscape. PNAS 113: 7195-7200.

Duarte, C.M. I.J. Losada, I.E. Hendricks, I. Mazarrase, and N. Marba. 2013. The role of coastal plant communities for climate change mitigation and adaptation. Nature Climate Change 3: 961-968.

Roberts, C.M. et al. 2017. Marine reserves can mitigate and promote adaptation to climate change. PNAS 114: 6167-6175.

## 6. Policies and Requirements

This syllabus represents current plans and objectives for this course. As the semester progresses, changes may need to be made to accommodate timing, logistics, or to enhance learning. Such changes, communicated clearly, are not unusual and should be expected.

### 6.1 Late Submissions & Make-up Requests

It is the responsibility of the student to access on-line lectures, readings, and quizzes to maintain satisfactory progress in the course.

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Computer or other hardware failures, except failure of the UF e-Learning system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration.

For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

#### Late assignments:

Late materials will have 10% of the total possible points deducted for every day late.

#### Quiz policy:

Quizzes are open for a generous amount of time. Once a quiz closes, it will NOT be reopened.

Please check *Announcements* in Canvas on a regular basis.

## 6.2 Semester Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning.

**At approximately the mid-point of the semester**, the School of Forest Resources & Conservation will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required but encouraged. This is not the UF Faculty Evaluation!

**At the end of the semester**, 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/>.

## 6.3 Netiquette: Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Failure to do so may result in loss of participation points and/or referral to the Dean of Students' Office.

<http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

## 6.4 Academic Honesty Policy

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."*

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct or appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated.

Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

## 6.5 Inclusive Learning Environment

This course embraces the University of Florida's Non-Discrimination Policy, which reads,

*The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act.*

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website: <http://multicultural.ufl.edu>.

## 6.6 Services for Students with Disabilities:

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

## 6.7 Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

## 7. Campus Helping Resources

For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu) | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFRC Academic Hub <https://ufl.instructure.com/courses/303721>

## 7.2 Student Life, Wellness, and Counseling Help

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- Counseling and Wellness resources <http://www.counseling.ufl.edu/cwc/>
- U Matter, We Care <http://www.umatter.ufl.edu/>
- Career Connections Center <http://career.ufl.edu/>
- Other resources are available at <http://www.distance.ufl.edu/getting-help> for online students.



### **7.3 Student Complaint Process**

The School of Forest Resources & Conservation cares about your experience and we will make every effort to address course concerns. We request that all our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered.

If you have a more urgent concern, your first point of contact should be the SFRC Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- Students in online courses: <http://www.distance.ufl.edu/student-complaint-process>
- Students in face-to-face courses: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>