

Instructor: Dr. Dorian J. Burnette
Office: 230, Johnson Hall
Phone: 901-678-4452
E-Mail: djbrntte@memphis.edu
Website: www.djburnette.com

Office Hours
11:30 a.m.-12:30 p.m. Mon-Wed
and by appointment

I encourage you to talk to me individually whenever you need to discuss your progress in the course or whenever you have a topic of special interest you want to discuss individually.

COURSE WEBSITE

memphis.instructure.com (Canvas)

COURSE TEXTBOOKS

[IPCC AR6 Climate Change 2021: The Physical Science Basis](#)
[IPCC AR6 Climate Change 2022: Impacts, Adaptation and Vulnerability](#)

ABOUT THE COURSE

This is a course that can cover a wide range of topics in the interdisciplinary field of geography. The topic for this semester is Climate Change Science and Impacts—the Intergovernmental Panel on Climate Change Sixth Assessment Report (IPCC AR6). After introductory lectures, students will read selections of the IPCC AR6 Working Group 1 and 2 reports, published in 2021 and 2022, respectively. Each student will lead multiple class discussions, receive a working knowledge of the various datasets used to study climate variability and change, and complete a written assignment.

GRADES

Your grade will be based on four activities. These four activities are weighted to determine your final grade though the weights are different between the two different sections:

Activity	ESCI 7301	ESCI 8301
Class Participation	20%	15%
Discussion Leadership	20%	15%
Data Exercise	20%	20%
Written Assignment	40%	50%

The typical grading scale is then used to determine your final letter grade:

Percentage	Grade	Percentage	Grade
90-100	A	70-79	C
80-89	B	60-69	D

Class Participation and Discussion Leadership:

Students should participate in all discussions. Discussions will start the 2nd week of class. I will lead the first chapter as an example. Students will lead class discussions starting on the 3rd week of class (6 September 2022). Please let me know if you will be traveling for a conference, etc., so I can assign you to lead discussions when you are on-campus. Discussion leaders are encouraged to 1) summarize the reading for the day and 2) consider questions that can be posed to the class to stimulate discussion. If you miss a class due to illness or other unforeseen emergency, you can write a two-page summary (typed, double-spaced) over the reading for that day and turn it in to me for credit.

Data Exercise:

There will be one data exercise during the semester that will familiarize you with the vast array of datasets in the modern and paleoclimatic records relevant to climate variability and change studies. Expect to learn not just how to find data, but also use online tools and other software to analyze these data.

Written Assignment:

Your “final exam” involves doing a literature search on a scientist in the broad field of paleoclimatology and writing a five-page paper (typed, double-spaced) that summarizes 1) who they are and 2) two papers where they are the lead-author. I will provide a list of names as a starting point after Fall Break, but you are free to choose a name not on that list. See me if you need assistance. Please upload the assignment to Canvas by 5 p.m. on our final exam day (6 December 2022).

Attendance:

I will not call roll. Obviously, this is a graduate-level seminar class, and participation/attendance is crucial. I will memorize your names and faces and will know who comes to class regularly. I may use such information to give the benefit of doubt to borderline grade situations.

STUDENT CONDUCT

Academic Dishonesty:

Cheating, plagiarism, or any other form of academic dishonesty will not be tolerated. Cases of academic dishonesty will be dealt with in accordance with the policies set forth in the University’s Code of Student Rights and Responsibilities available at www.memphis.edu/osa/pdfs/csrr.pdf. It is your responsibility to understand these policies. A lack of understanding is not an adequate defense against a charge of academic dishonesty.

Cell Phones, Laptops, Tablets:

The use of cell phones, laptops, or tablet computers for purposes other than note taking is not allowed during class. Flagrant violation of this policy will result in you being dismissed from class.

STUDENTS WITH DISABILITIES

Any student who may need class or test accommodation based on the impact of a disability will need to contact Student Disability Services (SDS) at 110 Wilder Tower, 901-678-2880, www.memphis.edu/drs/. SDS coordinates accommodations for students with documented disabilities. A registration form is available on their website.

COURSE SCHEDULE

Note: There is always a chance that this schedule could change. Any changes will be announced in class and updated in this syllabus on the course website.

Date	Topic	Chapter
23 August	Introduction	
25 August	Basic Training In Climate Variability and Change	
30 August	Framing, Context and Methods	1
1 September	Framing, Context and Methods	1
6 September	Changing State of the Climate System	2
8 September	Changing State of the Climate System	2
13 September	Human Influence on the Climate System	3
15 September	Human Influence on the Climate System	3
20 September	Future Global Climate	4
22 September	Future Global Climate	4
	<i>Data Exercise Assigned</i>	
27 September	Global Carbon and Other Biogeochemical Cycles	5
29 September	Global Carbon and Other Biogeochemical Cycles	5
4 October	Short-lived Climate Forcers	6
6 October	Short-lived Climate Forcers	6
11 October	No Class – Fall Break	
13 October	<i>Data Exercise Discussion</i>	
18 October	Energy Budget, Climate Feedbacks and Sensitivity	7
20 October	Energy Budget, Climate Feedbacks and Sensitivity	7
25 October	Water Cycle Changes	8
27 October	Water Cycle Changes	8
1 November	Ocean, Cryosphere and Sea Level Change	9
3 November	Ocean, Cryosphere and Sea Level Change	9
8 November	Linking Global to Regional Climate Change	10
10 November	Linking Global to Regional Climate Change	10
15 November	Weather and Climate Extreme Events	11
17 November	Weather and Climate Extreme Events	11
22 November	Impacts, Adaptation and Vulnerability	WGII TS
24 November	No Class – Thanksgiving Break	
29 November	Impacts, Adaptation and Vulnerability	WGII TS
6 December	<i>Written Assignment Due at 5 p.m.</i>	