

**BIOL 6000 Climate Change Biology**  
**SECTION A**  
**Spring 2015**  
**DEPT. OF BIOLOGY;**  
**COLLEGE OF ARTS & SCIENCES;**  
**VALDOSTA STATE UNIV.**  
**CREDIT HOURS: 3**

**INSTRUCTOR:** Dr. Matthew Waters

**OFFICE:** BSC 1106

**OFFICE HOURS** – Tuesday and Thursday: 10-11, 2-3:15

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**LECTURE HOURS:** TR 11-12:15, Bailey 1024

**REQUIRED TEXT:** Climate Change Biology by Lee Hannah, Academic Press  
ISBN: 0123741820

**COURSE DESCRIPTION:** An overview of climate change, how biological organisms are used to study past climate change, and how climate change affects biological organisms in recent time periods. Prerequisites: Acceptance into VSU Graduate School

**COURSE OBJECTIVES/EDUCATIONAL OUTCOMES:**

Valdosta State University (VSU) Department of Biology educational outcomes for this course include: numbers 1, 2, 3 (in part), and 5. University (VSU) educational outcomes for this course include: numbers 3, 4, 5, 7, and 8.

**COURSE POLICIES**

You are expected to attend all lectures. If a lecture is missed, **you** are responsible for obtaining any notes and handouts given that day. Reading of the appropriate lecture chapters and any lab materials should be completed **prior** to coming to class.

**Assigned text material** may be on the lecture exams; I will inform you during lecture as to the specific topics, tables, figures, and/or text pages for which you will be responsible.

**Midterm: March 5** is the last day to drop the class with a passing grade (WP) regardless of your point total. You cannot drop the class after midterm unless there are extenuating circumstances that must be acceptable to the Professor, Biology Department Head, Dean of Arts and Sciences, and the Vice President for Academic Affairs.

## **TENTATIVE LECTURE SCHEDULE:**

<b>TOPIC</b>	<b>Text Chapters</b>
<b>Climate Primer (3-4 weeks)</b>	
Green house planet Black body radiation, green house gases	1
Chemistry of Climate Change Isotopes, green house gas production, Ozone, atmospheric layering	1
Natural Divers and Major Features of Climate ENSO, Air cells, ocean currents, North Atlantic Deep Water Formation	2
Rising CO <sub>2</sub> and the Global Carbon Cycle CO <sub>2</sub> producers, CO <sub>2</sub> measurements, deforestation	2
<b>Impacts of Climate Change (6-7 weeks)</b>	
Species Range Shifts	3
Biological Timing and Climate Change	4
Ecosystem Change- Polar, Temperate, Tropical, Aquatic	5
Current Topics	
<b>Paleoclimate and Biology (3-4 weeks)</b>	
Paleoclimate Change DO-Events, Younger Dryas, Little Ice Age Medieval Warm Period	
Past Terrestrial Responses Tree Ring Studies, Vegetation Changes, Species/Biodiversity Changes	6
Past Marine Responses Forams, Diatoms, IRD	7
Past Freshwater Changes Paleolimnology, Mayan Collapse, Lake Agassiz, ostracods	8
Past Extinctions KT, Permian	9
<b>Other Topics</b>	
Climate Impacts on Human Civilizations	
Conservation Strategies	13
Connectivity and Landscape Management	14

In addition to these chapters we will also be reading several journal articles (10-15) supporting each topic as well as new directions in the field.

**Final grades are determined as a percentage of total points possible (500):**

**450 and above (90-100%) =A**

**400-450 (80-89%) =B**

**350-399 (70-79%) =C**

**300-349 (60-69%) =D**

**299 and below (below 60%) =F**

**Extra Credit: I DO NOT** give extra credit. Please do not ask!

## **GRADING POLICIES/ASSESSMENT**

### **Lecture:**

A. Three (3) lecture exams will be given during the semester, including the final exam. The final exam will **not** be strictly comprehensive (as noted earlier). Each exam is worth 100 points **Make-up exams are not an automatic right;** you must notify me within **24** hours of the missed exam, and provide a **valid reason**, or you will forfeit your opportunity for a make-up. The professor is the final judge of what is an acceptable excuse. You can only make up **one** exam.

B. We will read multiple articles from the current literature. I will provide a sheet used to assess the students reading of the papers. These sheets must be turned in at the beginning of the class that the article is discussed and will not be accepted during or after class. Also, these sheets serve as a class preparation so literature sheets are not accepted if student does not attend the day the paper was discussed.

C. Students will be assessed on responses to reflection questions and journal entries maintained throughout the semester. Also, class participation is measured on the student's participation in discussions and small groups question times.

D. Graduate students will submit a written mini-grant proposal to conduct similar research as we have studied in the class. Effort will be made to include the graduate student's chosen field of research if possible. Papers should not exceed 10-pages. Instead of a paper, graduate students can give a 30 minute seminar outlining 3 key papers and their proposal. Decision to do a paper or presentation needs to be made by Midterm.

Grades:	3 Tests (100 points)	300
	Journal reflection papers	50
	Other	50
	Proposal	100
Grade Total		500

### **LECTURE EXAMS:**

Lecture exams will be essay, short answer, and vocabulary definitions. Exams are not strictly comprehensive, although you will need to know the previous material to answer some questions on the future exam(s). Later topics and concepts build on previously discussed material; thus, the course is much like a story that builds on previous chapters.

**Excessive cell phone usage or computer usage not used for the class will be considered a lack of participation in the class. In addition, failure to attend class without a valid excuse is also considered poor participation. Anyone accessing these electronic devices DURING AN EXAM will be given a zero for that exam grade. The student may be subject to further discipline, up to and including, permanent dismissal and failure of the class.**

**Cheating:** Cheating is not permitted. Any student caught cheating on a lecture or lab exam will receive a failing grade (**F**) for the course, and will be reported to the Dean of Student Affairs. Cheating includes, but is not limited to: possessing written information on paper, body parts, clothes, etc. pertaining to the exam; accessing cell phones, pagers, or other electronic communication devices; unauthorized entry to the lab after a practical has been set up; as well as other means not specifically listed above.

**Family Educational Rights and Privacy Act of 1974 (FERPA; also known as the Buckley Amendment):** *By law*, it is not legal to release personal information about an individual to others. This means that grades, averages, test scores, and other information can only be released to that individual; thus, **exam scores, point totals, or final grades will not be issued in any unsecure manner, such as being posted, given verbally via telephone, or emailed. This is to ensure your privacy.**

**Students with Disabilities:** Students requiring special classroom accommodations or modifications because of **documented** disabilities should discuss these needs with the professor at the beginning of the semester. Disabled students not registered with the Access Office for Students with Disabilities should contact the program officer. Phone numbers are listed in the Campus Directory.